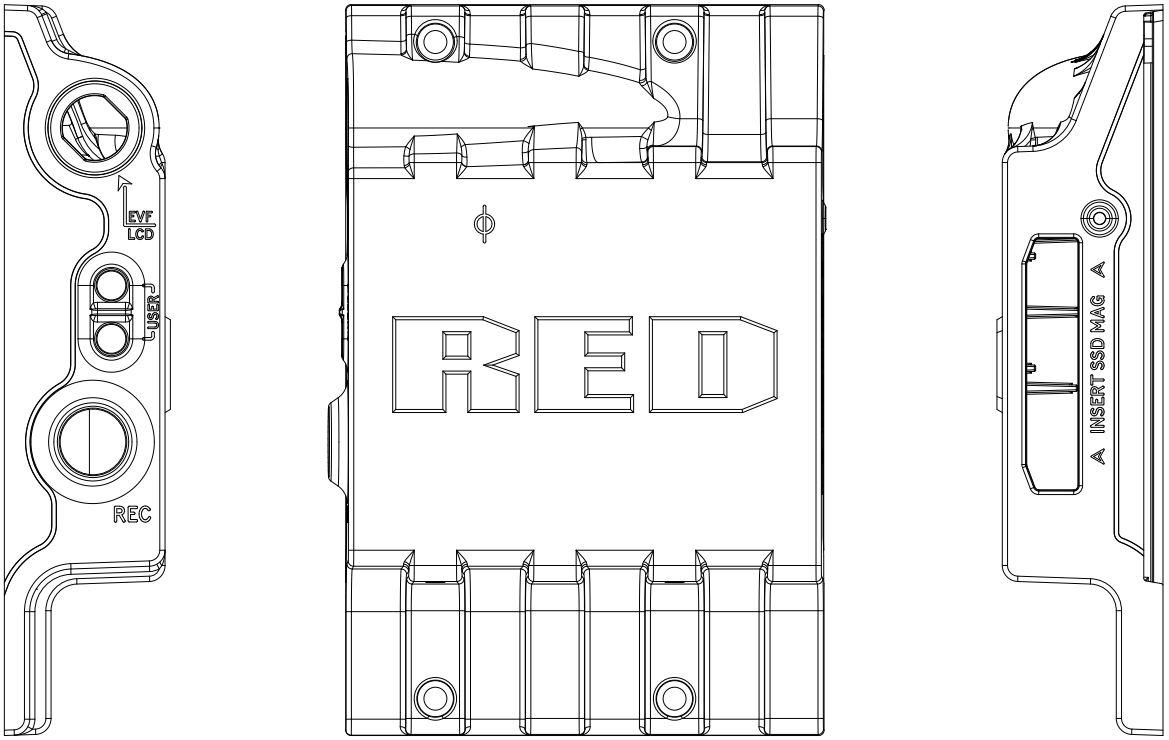
RED DSMC MEDIA
OPERATION GUIDE



RED MINI-MAG SYSTEM | REDMAG 1.8" SSD SYSTEM

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INDUSTRIAL CANADA EMISSION COMPLIANCE STATEMENTS

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

FEDERAL COMMUNICATIONS COMMISSION (FCC) STATEMENTS

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

NOTE: This device complies with Part 15 of the FCC Rules.

Operations subjected to the following two conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including that may cause undesirable interference.

CAUTION: If the device is changes or modified without permission from RED, the user may void his or her authority to operate the equipment.

AUSTRALIA AND NEW ZEALAND STATEMENTS

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to EN 55022:2006.

JAPAN STATEMENTS

This is a Class B product based on the standard of the Voluntary Control Council for Interference (VCCI) for information technology equipment. If this equipment is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

この装置は、情報処理装置等電波障害自主規制協議会(VCCI)の基準に基づくクラス B 情報技術装置です。この装置は家庭環境で使用することを目的としていますが、ラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。取扱説明書に従って正しい取り扱いをしてください。

EUROPEAN UNION COMPLIANCE STATEMENTS

RED declares that the equipment described in this document complies with the requirements of the European Council EMC Directive 2004/108/EC, Low Voltage Directive 2006/95/EC, RoHS Directive 2002/95/EC, and the WEEE Directive 2002/96/EC.

This declaration is based on compliance of the product to the following standards.

- EN 55022, Information Technology Equipment - Radio Disturbance Characteristics
- EN 55024, Information Technology Equipment - Immunity Characteristics
- EN 61000-3-2, Limits for harmonic current emissions
- EN 61000-3-3, Limits for harmonic current emissions
- EN 60950-1, Information Technology Equipment – Safety

INFORMATION

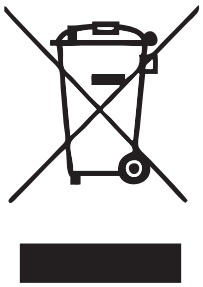
Products with the CE marking comply with the EMC Directive (2004/108/EC) and the Low Voltage Directive (2006/95/EC) issued by the Commission of the European Community. Compliance with these directives implies conformity to the following European Product Family Standards.

- EN 55022 (CISPR 22) – Electromagnetic Interference
- EN 55024-1 (CISPR 24) – Electromagnetic Immunity
- EN 61000-3-2 (IEC610000-3-2) – Power Line Harmonics
- EN 61000-3-3 (IEC610000) – Power Line Flicker
- EN 60065 (IEC60065) – Product Safety

NORWAY

This subsection does not apply for the geographical area within a radius of 20 km from the centre of Ny-Ålesund

Dette gjelder ikke for det geografiske området innenfor en radius av 20 km fra sentrum av Ny-Ålesund



The Waste Electrical and Electronic Equipment (WEEE) mark applies only to countries within the European Union (EU) and Norway. This symbol on the product and accompanying documents means that used electrical and electronic products should not be mixed with general household waste. For proper treatment, recovery and recycling, please take this product to designated collection points where it will be accepted free of charge. Alternatively, in some countries you may be able to return your products to your local retailer upon purchase of an equivalent new product.

Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling. Please contact your local authority for further details of your nearest designated collection point. Penalties may be applicable for incorrect disposal of this waste, in accordance with you national legislation.

For business users in the European Union, if you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

RESPONSIBLE PARTY:

RED Digital Cinema
34 Parker
Irvine, CA 92618
USA

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SAFETY INSTRUCTIONS

- DO NOT use the media or media modules near water. Avoid exposing your media or media modules to moisture. The units are not waterproof, so contact with water could cause permanent damage to the units as well as electric shock and serious injury to the user. DO NOT use the media or media modules in the rain or under other conditions with high moisture without appropriate protection, and immediately remove power source if the media or media modules are exposed to moisture.

WARNING: To reduce the risk of fire or electric shock, do not expose the media or media modules to rain or moisture.

- If fluids ir foreign objects get inside any of the media modules or RED STATIONS, disconnect the power source immediately and file a support ticket on support.red.com.
- DO NOT expose your media or media modules to excessive vibration or impact (shock). Be careful not to drop your media or media modules. Internal mechanisms may be damaged by severe shock. Mechanical alignment of elements may be affected by excessive vibration.
- Avoid using the media or media modules in areas with high humidity or dust.
- Do NOT expose the media or media modules to strong electronic or magnetic fields.
- Clean only using a dry cloth. When cleaning your media or media modules, remember that it is not waterproof and moisture can damage electronic circuitry. DO NOT rinse or immerse any element of the media or media modules, keep them dry at all times. DO NOT use soaps, detergents, ammonia, alkaline cleaners, and abrasive cleaning compounds or solvents. These substances may damage coatings and electronic circuitry.
- The RED STATIONS operate best in an air-conditioned environment.
- DO NOT operate or store near any heat sources such as radiators, heat registers, stoves, or any other apparatus that produce heat. Store in a protected, level and ventilated place. Avoid exposure to temperature extremes, damp, severe vibration, strong magnetic fields, direct sunlight or local heat sources during storage. Recommended storage and usage temperatures for your media and media modules are:
  - Operating range: 0°C to 40°C (32°F to 104°F)
  - Storage range: -20°C to +50°C (-4°F to +122°F)

  If there are any performance issues with your media or media modules when operating within this temperature range, please file a support ticket on support.red.com.
- The REAR SSD MODULE, RED MINI-MAG SIDE SSD MODULE, and DSMC 1.8" SSD SIDE MODULE are NOT HOT SWAPPABLE – meaning you cannot remove or install them while the camera is powered on. Before installing or removing any of these modules, you MUST power down the camera. Failure to do so may result in damage to the module and / or camera brain that will not be covered under warranty.
- Protect all power cords from being pinched, walked on or driven over by a vehicle. Replace any power cords suspected of sustaining damage due to crushing or other forms physical damage. Use media and media modules only when they are in good operating condition.
- Always use the original packaging or similarly structured packaging for transportation.
- USE AT YOUR OWN RISK. RED is not responsible for lost data, corrupted data, or damaged SSDs while using any of the SSD media modules or RED STATIONS.

CAUTION: Refer all service and repair to qualified RED service personnel. To reduce the risk of electric shock, and damage to the camera or accessories, DO NOT attempt to perform any servicing other than any procedures that are recommended in the operating instructions.

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01 DSMC MEDIA OVERVIEW

RED offers two (2) media systems for your RED Digital Still and Motion Camera (RED DSMC®):

- RED MINI-MAG™ system
- REDMAG™ 1.8" SSD system

RED MINI-MAG SYSTEM

This system centers around the RED MINI-MAG, which are the fastest, smallest, and most powerful media option for your RED EPIC or SCARLET camera. RED MINI-MAGS use a faster read/write speed for capturing higher frame rates and resolutions with less compression than previous DSMC media systems.

RED MINI-MAG PACKAGE

RED MINI-MAG SYSTEM COMPONENTS

The RED MINI-MAG system includes the following items, available at red.com (this table does not include any of the RED MINI-MAG, collections or packages, which are made up of the items below):

ITEM	PART NUMBER
RED MINI-MAG™ (512GB)	750-0053
RED MINI-MAG™ SIDE SSD MODULE	720-0021
RED STATION® RED MINI-MAG™	750-0055
RED MINI-MAG™ CASE (4-PACK)	790-0404
RED MINI-MAG™ CASE (12-PACK)	790-0405

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REDMAG 1.8" SSD SYSTEM

This system centers around the REDMAG 1.8" SSD, which is a fast and reliable media option for your DSMC.

DSMC MEDIA PACK

REDMAG 1.8" SSD SYSTEM COMPONENTS

The REDMAG 1.8" SSD system includes the following items, available at red.com (this table does not include any of the REDMAG 1.8" SSD collections or packages, which are made up of the items below):

ITEM	PART NUMBER
REDMAG™ 1.8" SSD (48GB)	750-0044
REDMAG™ 1.8" SSD (64GB)	750-0025
REDMAG™ 1.8" SSD (128GB)	750-0021
REDMAG™ 1.8" SSD (256GB)	750-0026
REDMAG™ 1.8" SSD (512GB)	750-0037
RED DSMC® SIDE SSD MODULE	720-0013
REAR SSD MODULE	720-0009
RED STATION® REDMAG™ 1.8"	750-0006
RED STATION® REDMAG™ 1.8" (MINI)–ESATA	750-0035
RED STATION® REDMAG™ 1.8" (MINI)–USB 3.0	750-0036
RED STATION® REDMAG™ 2.5"	750-0007
RED STATION® BASE	750-0004
REDMAG™ CASE (4-PACK)	790-0204
REDMAG™ CASE(12-PACK)	790-0144

ADDITIONAL RESOURCES

The following resources offer additional information about RED, the DSMC system, and the RED community:

- **RED.com**: Check the official RED website for the latest information about RED products.
- **RED Learn Articles**: RED offers in-depth technical articles about RED cameras, post-production, and digital cinematography.
- **RED.com/downloads**: Go to the RED Downloads page to download the latest firmware, operation guides, and post-production software.
- **Support.red.com**: Check the RED SUPPORT site for FAQs, or to file a support ticket.
- **Reduser.net**: Discuss all things RED on the REDUSER third-party forum.

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02 RED MINI-MAG SYSTEM

RED MINI-MAG

The RED MINI-MAG is the fastest, smallest, and most powerful media option for your RED EPIC® or SCARLET® camera. RED MINI-MAGS use a faster read/write speed for capturing higher frame rates and resolutions with less compression than previous DSMC media systems.

The RED MINI-MAG is available in the following storage capacity: 512GB.

NOTE: The RED MINI-MAG system requires that your DSMC is on firmware v5.1.34 or later. If your DSMC is on an earlier version, you can use the RED MINI-MAG to upgrade to v5.1.34 or later. While you can use a RED MINI-MAG to downgrade to DSMC firmware versions earlier than v5.1.34, the DSMC will not be fully functional with the RED MINI-MAG SIDE SSD MODULE installed; you will need to either switch to a DSMC 1.8" SSD SIDE MODULE or upgrade to v5.1.34 or later.

RED MINI-MAG

RED MINI-MAG INCLUDED COMPONENTS

The item listed in the table below ships with the RED MINI-MAG.

ITEM	PART NUMBER
RED MINI-MAG (512GB)	750-0053

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RED MINI-MAG SIDE SSD MODULE

The RED MINI-MAG SIDE SSD MODULE attaches to the DSMC so that you can mount a RED MINI-MAG to your camera.

The RED MINI-MAG SIDE SSD MODULE has the same EVF/LCD LEMO connector, user keys, and REC button as the DSMC 1.8" SSD SIDE MODULE.

WARNING: The RED MINI-MAG SIDE SSD MODULE is NOT HOT SWAPPABLE, meaning you cannot remove or install the module while the camera is powered on. Before installing or removing the RED MINI-MAG SIDE SSD MODULE, you MUST power down the camera. Failure to do so may result in damage to the module or DSMC that will not be covered under warranty.

RED MINI-MAG SIDE SSD MODULE

RED MINI-MAG SIDE SSD MODULE INCLUDED COMPONENTS

The item listed in the table below ships with the RED MINI-MAG SIDE SSD MODULE.

ITEM	PART NUMBER
RED MINI-MAG SIDE SSD MODULE	720-0021

RED MINI-MAG SIDE SSD MODULE CONTROLS

CONTROL	DESCRIPTION
User Key 1	Programmable key User Key 1 + 2 Press: Eject Media
User Key 2	Programmable key User Key 1 + 2 Press: Eject Media
REC button	Programmable key Full Press: Record Toggle Half Press: AF Start

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RED MINI-MAG SIDE SSD MODULE CONNECTORS

The RED MINI-MAG SIDE SSD MODULE mounts to the left side of the DSMC BRAIN. The rear face of this module features a slot for inserting a RED MINI-MAG.

WARNING: Do not attempt to insert any media type except for the RED MINI-MAG, or any foreign objects, into the SSD slot, as that may damage the RED MINI-MAG SIDE SSD MODULE or DSMC system.

The EVF/LCD connector on the front face of the RED MINI-MAG SIDE SSD MODULE provides digital video, communications, and power interconnection between the DSMC and a RED EVF or RED LCD. Due to the requirement for absolute data integrity, the pinout of the EVF/LCD connector is not published.

CONNECTOR	DESCRIPTION	COMPATIBLE PARTS	PART NUMBERS
EVF/LCD connector	VIEWFINDER output	LCD/EVF CABLE (RIGHT-TO-RIGHT) 7"	790-0158
		LCD/EVF CABLE (RIGHT-TO-RIGHT) 12"	790-0162
		LCD CABLE 6'	790-0055
		LCD CABLE 10'	790-0056
RED MINI-MAG slot	Slot for inserting a RED MINI-MAG	RED MINI-MAG	750-0053

RED MINI-MAG SIDE SSD MODULE LEDS

LED	COLOR/FLASHING	DESCRIPTION
Media Indicator LED	Off	No media present
	Green	Ready to record
	Red	Recording
	Red slow flashing	Recording; 25% media left
	Red fast flashing	Recording; 5% media left
	Yellow	Finalizing
	Yellow flashing	Accessing media (for example, when formatting)

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RED STATION RED MINI-MAG

The RED STATION RED MINI-MAG is designed exclusively for offloading data from RED MINI-MAGS, and connects to your computer via Firewire 800, eSATA 6G, or USB 3.0. Its compact design takes up less space than the traditional RED STATION REDMAG 1.8" and fits easier into cases for storage.

RED STATION RED MINI-MAG

RED STATION RED MINI-MAG INCLUDED COMPONENTS

The items listed in the table below ship with the RED STATION RED MINI-MAG.

ITEM	PART NUMBER
RED STATION RED MINI-MAG	750-0055
eSATA Data Cable (24")	790-0250
RED STATION USB 3.0 CABLE (24")	790-0314
RED STATION FW800 Cable (2")	790-0253
RED STATION FW800 Cable (24")	790-0251
RED STATION AC POWER ADAPTOR	790-0292
RED STATION USB TO DC POWER CABLE (24")	790-0316

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RED STATION RED MINI-MAG CONNECTORS AND CONTROLS

RED STATION RED MINI-MAG (Rear)

CONNECTOR	DESCRIPTION	COMPATIBLE PARTS	PART NUMBERS
eSATA 6G connector[1]	Connect to a computer via an eSATA connection	eSATA Data Cable (24")	790-0250
FireWire 800	Connect to a computer or additional RED STATIONS via a FireWire 800 connection	RED STATION FW800 Cable (2")	790-0253
		RED STATION FW800 Cable (24")	790-0251
USB 3.0 slot	Connect to computer via USB 3.0 connection	RED STATION USB 3.0 CABLE (24")	790-0314
On/Off Switch	Turn on/off	NA	NA
+5 VDC IN	+5 VDC power in	RED STATION AC POWER ADAPTOR	790-0292
		RED STATION USB TO DC POWER CABLE (24")	790-0316
RED MINI-MAG slot (front)	Slot for inserting a RED MINI-MAG	RED MINI-MAG	750-0053

1. Only Silicon Image or HighPoint SATA cards connect to the RED STATION RED MINI-MAG through eSATA.

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RED STATION RED MINI-MAG LEDS

RED STATION RED MINI-MAG

LED	COLOR/FLASHING	DESCRIPTION
Power Indicator LED	Off	Powered off and turned off
	Red	Powered on and turned on
	Red fast flashing	Accessing media

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03 REDMAG 1.8" SSD SYSTEM

REDMAG 1.8" SSD

The REDMAG 1.8" SSD media works with the DSMC 1.8" SSD SIDE MODULE and REAR SSD MODULE to provide a fast and reliable recording medium.

The REDMAG 1.8" SSD is available in the following storage capacities: 48GB, 64GB, 128GB, 256GB, and 512GB.

REDMAG 1.8" SSD

REDMAG 1.8" SSD INCLUDED COMPONENTS

Each REDMAG 1.8" SSD ships with one (1) of the following:

ITEM	PART NUMBER
REDMAG 1.8" SSD (48GB)	750-0044
REDMAG 1.8" SSD (64GB)	750-0025
REDMAG 1.8" SSD (128GB)	750-0021
REDMAG 1.8" SSD (256GB)	750-0026
REDMAG 1.8" SSD (512GB)	750-0037

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SSD MODULES

You can mount the REDMAG 1.8" SSD to the following modules:

- DSMC 1.8" SSD SIDE MODULE
- REAR SSD MODULE

DSMC 1.8" SSD SIDE MODULE

The DSMC 1.8" SSD SIDE MODULE attaches to the DSMC so that you can mount a REDMAG 1.8" SSD to your camera.

The DSMC 1.8" SSD SIDE MODULE has the same EVF/LCD LEMO connector, user keys, and REC button as the RED MINI-MAG SIDE SSD MODULE.

WARNING: The DSMC 1.8" SSD SIDE MODULE is NOT HOT SWAPPABLE, meaning you cannot remove or install the module while the camera is powered on. Before installing or removing the DSMC 1.8" SSD SIDE MODULE you MUST power down the camera. Failure to do so may result in damage to the module or DSMC that will not be covered under warranty.

DSMC 1.8" SSD SIDE MODULE (Rear and Front)

DSMC 1.8" SSD SIDE MODULE INCLUDED COMPONENTS

The items listed in the table below ship with the DSMC 1.8" SSD SIDE MODULE.

ITEM	PART NUMBER
DSMC 1.8" SSD SIDE MODULE	720-0013
Four (4) M3x.05 x 6 mm Cap Screws	NA

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DSMC 1.8" SSD SIDE MODULE CONTROLS

DSMC 1.8" SSD SIDE MODULE (Front)

CONTROL	DESCRIPTION
User Key 1	Programmable key User Key 1 + 2 Press: Eject Media
User Key 2	Programmable key User Key 1 + 2 Press: Eject Media
REC button	Programmable key Full Press: Record Toggle Half Press: AF Start

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DSMC 1.8" SSD SIDE MODULE CONNECTORS

The DSMC 1.8" SSD SIDE MODULE mounts to the left side of the DSMC BRAIN. The rear face of this module features a slot for inserting a REDMAG 1.8" SSD.

WARNING: Do not attempt to insert any media type except for the REDMAG 1.8" SSD, or any foreign objects, into the SSD slot, as that may damage the DSMC 1.8" SSD SIDE MODULE or DSMC system.

The EVF/LCD connector on the front face of the DSMC 1.8" SSD SIDE MODULE provides digital video, communications, and power interconnection between the DSMC and a RED EVF or RED LCD. Due to the requirement for absolute data integrity, the pinout of the EVF/LCD connector is not published.

DSMC 1.8" SSD SIDE MODULE (Rear and Front)

CONNECTOR	DESCRIPTION	COMPATIBLE PARTS	PART NUMBERS
EVF/LCD connector (front)	VIEWFINDER output	LCD/EVF CABLE (RIGHT-TO-RIGHT) 7"	790-0158
		LCD/EVF CABLE (RIGHT-TO-RIGHT) 12"	790-0162
		LCD CABLE 6'	790-0055
		LCD CABLE 10'	790-0056
REDMAG 1.8" SSD slot (rear)	Slot for inserting a REDMAG 1.8" SSD	REDMAG 1.8" SSD (48GB)	750-0044
		REDMAG 1.8" SSD (64GB)	750-0025
		REDMAG 1.8" SSD (128GB)	750-0021
		REDMAG 1.8" SSD (256GB)	750-0026
		REDMAG 1.8" SSD (512GB)	750-0037

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DSMC 1.8" SSD SIDE MODULE LEDS

DSMC 1.8" SSD SIDE MODULE (Rear)

LED	COLOR/FLASHING	DESCRIPTION
Media Indicator LED	Off	No media present
	Green	Ready to record
	Red	Recording
	Red slow flashing	Recording; 25% media left
	Red fast flashing	Recording; 5% media left
	Yellow	Finalizing
	Yellow flashing	Accessing media (for example, when formatting)

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REAR SSD MODULE

The REAR SSD MODULE secures onto the back of a MODULE ADAPTOR to serve as a rear location for recording to a REDMAG 1.8" SSD. In the case that you are using cables or configurations that make it difficult to access your DSMC 1.8" SSD SIDE MODULE, the REAR SSD MODULE is positioned to make it easy to swap and record to a REDMAG 1.8" SSD.without interference.

The REAR SSD MODULE does not have any user keys or control buttons.

NOTE: The REAR SSD MODULE mounts only to a MODULE ADAPTOR or a +1 ADAPTOR MODULE.

REAR SSD MODULE

REAR SSD MODULE INCLUDED COMPONENTS

The item listed in the table below ships with the REAR SSD MODULE.

ITEM	PART NUMBER
REAR SSD MODULE	720-0009

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REAR SSD MODULE CONNECTORS

The REAR SSD MODULE mounts to a MODULE ADAPTOR or a +1 ADAPTOR MODULE on the back of the DSMC BRAIN. The side of the REAR SSD MODULE features a slot for inserting a REDMAG 1.8" SSD.

WARNING: Do not attempt to insert any media type except for the REDMAG 1.8" SSD, or any foreign objects, into the SSD slot, as that may damage the REAR SSD MODULE or DSMC system.

CONNECTOR	DESCRIPTION	COMPATIBLE PARTS	PART NUMBERS
SEARAY™ connector (front)	Connects to complementary SEARAY connector on the MODULE ADAPTOR; facilitates communication between DSMC and REAR SSD MODULE	MODULE ADAPTOR	720-0008
		+1 ADAPTOR MODULE	720-0018
SEARAY connector (rear)	Connects to complementary SEARAY connector on RED rear modules	PRO BATTERY MODULE (DUAL)	720-0005
		PRO BATTERY MODULE (QUAD)	720-0006
		QUICKPLATE MODULE	790-0343
		REDVOLT XL MODULE	740-0031
		PRO I/O MODULE	720-0004
		REDMOTE	770-0006
1/4-20 mounting holes (top)	Five (5) 1/4-20 mounting holes for mounting the RED TOUCH or other RED products	NA	NA
Lock (bottom)	Use T20 Torx® driver to lock (CW) and unlock (CCW) the module	T20 Torx driver	NA
REDMAG 1.8" SSD slot (side)	Slot for inserting a REDMAG 1.8" SSD	REDMAG 1.8" SSD (48GB)	750-0044
		REDMAG 1.8" SSD (64GB)	750-0025
		REDMAG 1.8" SSD (128GB)	750-0021
		REDMAG 1.8" SSD (256GB)	750-0026
		REDMAG 1.8" SSD (512GB)	750-0037

REAR SSD MODULE LEDS

LED	COLOR/FLASHING	DESCRIPTION
Media Indicator LED	Off	No media present
	Green	Ready to record
	Red	Recording
	Red slow flashing	Recording; 25% media left
	Red fast flashing	Recording; 5% media left
	Yellow	Finalizing
	Yellow flashing	Accessing media (for example, when formatting)

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RED STATIONS

You can use the following items to offload data from your REDMAG 1.8" SSD and manage your media:

- RED STATION REDMAG 1.8"
- RED STATION REDMAG 1.8" (MINI)–ESATA
- RED STATION REDMAG 1.8" (MINI)–USB 3.0
- RED STATION REDMAG 2.5"
- RED STATION BASE (provides power to RED STATIONS; is not a REDMAG 1.8" SSD reader)

RED STATION REDMAG 1.8"

The RED STATION REDMAG 1.8" reads and offloads data from your REDMAG 1.8" SSD to your hard drive when connected to your computer. The RED STATION REDMAG 1.8" connects via eSATA, FireWire 800, or USB 2.0 to your laptop or desktop computer.

RED STATION REDMAG 1.8"

RED STATION REDMAG 1.8" INCLUDED COMPONENTS

The items listed in the table below ship with the RED STATION REDMAG 1.8".

ITEM	PART NUMBER
RED STATION REDMAG 1.8"	750-0006
RED STATION RUBBER FEET SET	790-0293
eSATA Data Cable (24")	790-0250
RED STATION FW800 Cable (2")	790-0253
RED STATION FW800 Cable (24")	790-0251
RED STATION USB-TO-MINI USB CABLE (24”)	790-0315
RED STATION AC POWER ADAPTOR	790-0292
RED STATION USB TO DC POWER CABLE (24")	790-0316
RED STATION DC POWER COUPLER CABLE (2")	790-0249

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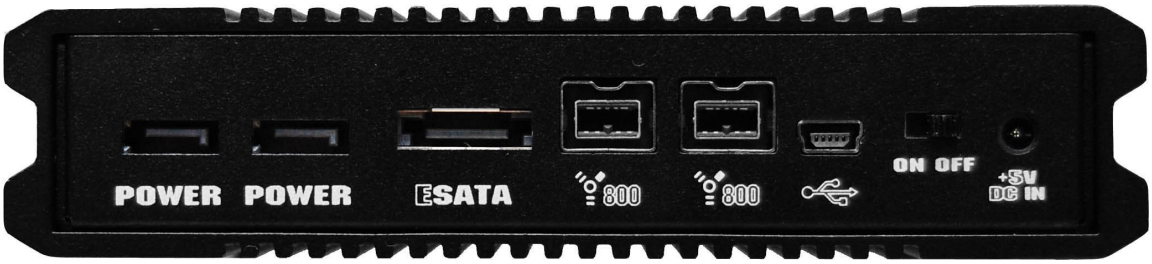
RED STATION REDMAG 1.8" CONNECTORS AND CONTROLS



RED STATION REDMAG 1.8" (Rear)

CONNECTOR	DESCRIPTION	COMPATIBLE PARTS	PART NUMBERS
POWER	Both connectors accept power from any RED STATION that is already connected to a RED STATION BASE; can also output power to another RED STATION in a stand-alone configuration or when powered by a RED STATION BASE	RED STATION DC POWER COUPLER (2")	790-0249
eSATA connector[1]	Connect to computer via an eSATA connection	eSATA Data Cable (24")	790-0250
FireWire 800	Use either connector to connect to a computer or additional RED STATIONS via a FireWire 800 connection	RED STATION FW800 Cable (2")	790-0253
		RED STATION FW800 Cable (24")	790-0251
Mini USB slot	Connect to a computer via a Mini USB connection	USB-TO-MINI USB CABLE (24")	790-0315
On/Off Switch	Turn on/off	NA	NA
+5 VDC IN	+5 VDC power in	RED STATION AC POWER ADAPTOR	790-0292
		RED STATION USB TO DC POWER CABLE (24")	790-0316
REDMAG 1.8" SSD slot (front)	Slot for inserting a REDMAG 1.8" SSD	REDMAG 1.8" SSD (48GB)	750-0044
		REDMAG 1.8" SSD (64GB)	750-0025
		REDMAG 1.8" SSD (128GB)	750-0021
		REDMAG 1.8" SSD (256GB)	750-0026
		REDMAG 1.8" SSD (512GB)	750-0037

1. Only Silicon Image or HighPoint SATA cards connect to the RED STATION REDMAG 1.8" through eSATA.

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RED STATION REDMAG 1.8" LEDS

RED STATION REDMAG 1.8" (Front)

LED	COLOR/FLASHING	DESCRIPTION
Power Indicator LED	Off	Powered off and turned off
	Red	Powered on and turned on
	Red fast flashing	Accessing media

RED STATION REDMAG 1.8" (MINI)

The RED STATION REDMAG 1.8" (MINI) reads and offloads data from your REDMAG 1.8" SSD to your hard drive when connected to your computer. Compact form factor makes the RED STATION REDMAG 1.8" (MINI) perfect for offloading your REDMAG 1.8" SSD when workspace is limited and portability makes all the difference.

The RED STATION REDMAG 1.8" (MINI) is available with either of the following sets of ports:

- **FireWire 800 and eSATA**: P/N 750-0035
- **FireWire 800 and USB 3.0**: P/N 750-0036

RED STATION REDMAG 1.8" (MINI)

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RED STATION REDMAG 1.8" (MINI)-ESATA INCLUDED COMPONENTS

The items listed in the table below ship with the RED STATION REDMAG 1.8" (MINI)–ESATA.

ITEM	PART NUMBER
RED STATION REDMAG 1.8"–ESATA	750-0035
eSATA Data Cable (24")	790-0250
RED STATION FW800 Cable (2")	790-0253
RED STATION FW800 Cable (24")	790-0251
RED STATION AC POWER ADAPTOR	790-0292
RED STATION USB TO DC POWER CABLE (24")	790-0316

RED STATION REDMAG 1.8" (MINI)-USB 3.0 INCLUDED COMPONENTS

The items listed in the table below ship with the RED STATION REDMAG 1.8" (MINI)–USB 3.0.

ITEM	PART NUMBER
RED STATION REDMAG 1.8"–USB 3.0	750-0036
RED STATION USB 3.0 CABLE (24")	790-0314
RED STATION FW800 Cable (2")	790-0253
RED STATION FW800 Cable (24")	790-0251
RED STATION AC POWER ADAPTOR	790-0292
RED STATION USB TO DC POWER CABLE (24")	790-0316

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RED STATION REDMAG 1.8" (MINI) CONNECTORS AND CONTROLS

RED STATION REDMAG 1.8" (MINI)–ESATA (Rear)

RED STATION REDMAG 1.8" (MINI)–USB 3.0 (Rear)

CONNECTOR	DESCRIPTION	COMPATIBLE PARTS	PART NUMBERS
eSATA connector[1]	Connect to a computer via an eSATA connection (only on P/N 750-0035)	eSATA Data Cable (24")	790-0250
USB 3.0 slot	Connect to a computer via a USB 3.0 connection (only on P/N 750-0036)	RED STATION USB 3.0 CABLE (24")	790-0314
FireWire 800	Use either connector to connect to a computer or additional RED STATIONS via a FireWire 800 connection	RED STATION FW800 Cable (2")	790-0253
		RED STATION FW800 Cable (24")	790-0251
On/Off Switch	Turn on/off	NA	NA
+5 VDC IN	+5 VDC power in	RED STATION AC POWER ADAPTOR	790-0292
		RED STATION USB TO DC POWER CABLE (24")	790-0316
REDMAG 1.8" SSD slot (front)	Slot for inserting a REDMAG 1.8" SSD	REDMAG 1.8" SSD (48GB)	750-0044
		REDMAG 1.8" SSD (64GB)	750-0025
		REDMAG 1.8" SSD (128GB)	750-0021
		REDMAG 1.8" SSD (256GB)	750-0026
		REDMAG 1.8" SSD (512GB)	750-0037

1. Only Silicon Image or HighPoint SATA cards connect to the RED STATION REDMAG 1.8" (MINI) through eSATA.

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RED STATION REDMAG 1.8" (MINI)

RED STATION REDMAG 1.8" (MINI) (Front)

LED	COLOR/FLASHING	DESCRIPTION
Power Indicator LED	Off	Powered off and turned off
	Red	Powered on and turned on
	Red fast flashing	Accessing media

RED STATION REDMAG 2.5"

You can use the RED STATION REDMAG 2.5" to offload content from your REDMAG 1.8" SSD to a third-party external 2.5" SSD or spinning hard drive. RED does not provide any 2.5" media or drives.

RED STATION REDMAG 2.5"

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RED STATION REDMAG 2.5" INCLUDED COMPONENTS

The items listed in the table below ship with the RED STATION REDMAG 2.5".

ITEM	PART NUMBER
RED STATION REDMAG 2.5"	750-0007
RED STATION RUBBER FEET SET	790-0293
eSATA Data Cable (24")	790-0250
RED STATION FW800 Cable (2")	790-0253
RED STATION FW800 Cable (24")	790-0251
RED STATION USB-TO-MINI USB CABLE (24”)	790-0315
RED STATION AC POWER ADAPTOR	790-0292
RED STATION USB TO DC POWER CABLE (24")	790-0316
RED STATION DC POWER COUPLER CABLE (2")	790-0249

COMPATIBLE 2.5" HARD DRIVES

The following 2.5" hard drives are compatible with the RED STATION REDMAG 2.5":

- Seagate 2.5" Desktop Hard Drive 5400 RPM, 320GB (Model number: ST9320325AS)
- Seagate 2.5" Desktop Hard Drive 5400 RPM, 500GB (Model number: ST9500325AS)
- Seagate 2.5" Desktop Hard Drive 7200 RPM, 250GB (Model number ST9250410AS)
- Seagate 2.5" Desktop Hard Drive 7200 RPM, 320GB (Model number ST9320423AS)
- Western Digital 2.5" Desktop Hard Drive 7200 RPM, 320GB (Black) (Model number: WD3200BJKT)

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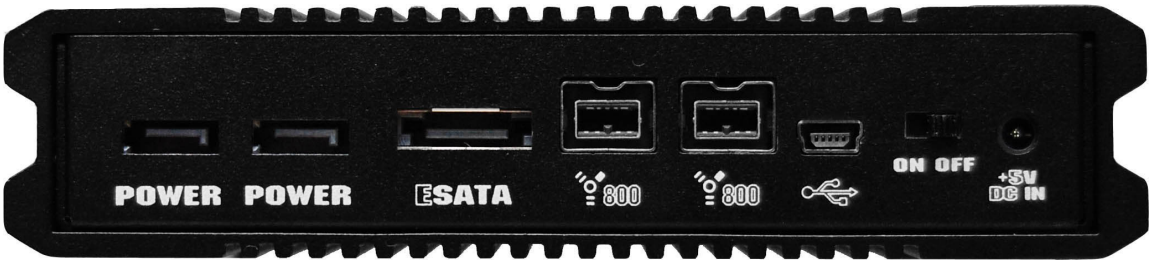
RED STATION REDMAG 2.5" CONNECTORS AND CONTROLS



RED STATION REDMAG 2.5" (Rear)

CONNECTOR	DESCRIPTION	COMPATIBLE PARTS	PART NUMBERS
POWER	Both connectors accept power from any RED STATION that is already connected to a RED STATION BASE; can also output power to another RED STATION in a stand-alone configuration or when powered by a RED STATION BASE	RED STATION DC POWER COUPLER (2")	790-0249
eSATA connector[1]	Connect to computer via an eSATA connection	eSATA Data Cable (24")	790-0250
FireWire 800	Use either connector to connect to a computer or additional RED STATIONS via a FireWire 800 connection	RED STATION FW800 Cable (2")	790-0253
		RED STATION FW800 Cable (24")	790-0251
Mini USB slot	Connect to computer via a Mini USB connection	USB-TO-MINI USB CABLE (24")	790-0315
On/Off Switch	Turn on/off	NA	NA
+5 VDC IN	+5 VDC power in	RED STATION AC POWER ADAPTOR	790-0292
		RED STATION USB TO DC POWER CABLE (24")	790-0316
2.5" Hard Drive slot (front)	Slot for inserting a third-party 2.5" SSD or spinning hard drive	NA	NA

1. Only Silicon Image or HighPoint SATA cards connect to the RED STATION REDMAG 2.5" through eSATA.

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RED STATION REDMAG 2.5" LEDS

RED STATION REDMAG 2.5” (Front)

LED	COLOR/FLASHING	DESCRIPTION
Power Indicator LED	Off	Powered off and turned off
	Red	Powered on and turned on
	Red fast flashing	Accessing media

RED STATION BASE

The RED STATION BASE provides power to up to three (3) RED STATIONS (excluding the RED STATION REDMAG 1.8" (MINI) and RED STATION RED MINI-MAG), eliminating the need to have AC power adaptors going to each module. This product is a great solution for those who are managing multiple RED STATIONS and want to reduce cable clutter.

RED STATION BASE

RED STATION BASE INCLUDED COMPONENTS

The items listed in the table below ship with the RED STATION BASE.

ITEM	PART NUMBER
RED STATION BASE	750-0004
RED STATION BASE AC POWER ADAPTOR	790-0308
RED STATION DC POWER COUPLER CABLE (2")	790-0249

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RED STATION BASE CONNECTORS AND CONTROLS

RED STATION BASE (Rear)

CONNECTOR	DESCRIPTION	COMPATIBLE PARTS	PART NUMBERS
POWER	Allows RED STATION BASE to power up to three (3) RED STATIONS	RED STATION DC POWER COUPLER (2")	790-0249
On/Off Switch	Turn on/off	NA	NA
+5 VDC IN	+5 VDC power in	RED STATION AC POWER ADAPTOR	790-0292
		RED STATION USB TO DC POWER CABLE (24")	790-0316

RED STATION BASE LEDS

RED STATION BASE (Front)

LED	COLOR/FLASHING	DESCRIPTION
Power Indicator LED	Off	Powered off and turned off
	Red	Powered on and turned on

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04 INSTALL MEDIA MODULES

This section explains how to install the following modules to the DSMC BRAIN:

- RED MINI-MAG SIDE SSD MODULE
- DSMC 1.8" SSD SIDE MODULE
- REAR SSD MODULE

WARNING: The DSMC media modules are NOT HOT SWAPPABLE, meaning you cannot remove or install the modules while the camera is powered on. Before installing or removing the DSMC media modules, you MUST power down the camera. Failure to do so may result in damage to the modules or DSMC that will not be covered under warranty.

INSTALL SIDE MEDIA MODULES

The RED MINI-MAG SIDE SSD MODULE and DSMC 1.8" SSD SIDE MODULE both attach to the BRAIN using the same screws and tools, so you can easily switch between these two (2) modules.

REMOVE SIDE MEDIA MODULES

Follow the instructions in this section to remove any of the following modules from the DSMC BRAIN:

- RED MINI-MAG SIDE SSD MODULE
- DSMC 1.8" SSD SIDE MODULE

REQUIRED TOOL: T10 Torx® driver

1. Power down the camera.
2. Use a T10 Torx driver to remove the four (4) M3x.05 x 6 mm cap screws that attach the module to the BRAIN in a cross pattern.

Remove Screws

3. Remove the module from the DSMC BRAIN.

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4. Inspect the connections and pins on the DSMC BRAIN and ensure that they are clean and undamaged.
   NOTE: Do NOT remove the two (2) red and black tamper-proof stickers.

Inspect Connections

ATTACH SIDE MEDIA MODULES

Follow the instructions in this section to attach any of the following modules to the DSMC BRAIN:

- RED MINI-MAG SIDE SSD MODULE
- DSMC 1.8" SSD SIDE MODULE

REQUIRED TOOL: T10 Torx® driver

1. Place the side media module on the DSMC BRAIN, so that the mounting holes of the module align with the screw holes of the DSMC BRAIN.
2. Use a T10 Torx driver to tighten the four (4) M3x.05 x 6 mm cap screws by about two (2) turns in a cross pattern. DO NOT FULLY TIGHTEN.

Tighten Screws

3. Use a T10 Torx driver to fully tighten the four (4) M3x.05 x 6 mm cap screws (DO NOT OVERTIGHTEN, or damage may occur to the DSMC).
4. Insert the SSD in the SSD slot on the back of the side media module:
   - **RED MINI-MAG SIDE SSD MODULE**: Install the RED MINI-MAG.
   - **DSMC 1.8" SSD SIDE MODULE**: Install the REDMAG 1.8" SSD.

   NOTE: Do not attempt to insert the RED MINI-MAG in the DSMC 1.8" SSD SIDE MODULE, and do not attempt to insert the REDMAG 1.8" SSD in the RED MINI-MAG SIDE SSD MODULE.

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INSTALL THE REAR SSD MODULE

The REAR SSD MODULE attaches to the DSMC system the same way that the other rear modules attach to the system. For more information about installing rear DSMC modules, see the DSMC Operation Guide available at www.red.com/downloads.

NOTE: Do not attempt to insert the RED MINI-MAG in the REAR SSD MODULE.

REAR SSD MODULE

EJECT MEDIA FROM CAMERA (UNMOUNT)

IMPORTANT: To ensure data integrity, media must always be unmounted prior to removal from the camera. This ensures that power is removed from the digital media and any open data files are closed. Failure to properly unmount media may result in lost data or corrupted files.

Removing an SSD without first unmounting it will not physically damage the media, however it does increase the risk of file corruption, so it's good operational practice to unmount the media if possible before removing or disconnecting. Unmounting the digital media takes a few seconds, protects the integrity of your recorded data, and helps clips mount instantly to your workstation in post-production.

NOTE: Improper removal of media without first unmounting the SSD will result in a warning notification: "Media removed without first ejecting. Data integrity risk." Always unmount media before physically removing the disk to protect your media and footage.

To eject media, follow the instructions below:

1. Eject the media using one of the following modules:
   - **REDMOTE/Touchscreen LCD**: Go to **Menu** > **Media** > **Eject Media**.
   - **DSMC SIDE HANDLE**: Press **User Key 7** (lowest of the system keys). The default function for this key is Eject Media; however, you can remap this key.
   - **RED MINI-MAG SIDE SSD MODULE/DSMC 1.8" SSD SIDE MODULE**: Press **User Key 1** + **2**. The default function for this key combination is Eject Media; however, you can remap this key combination.

   When media is ejected, Viewfinder output(s) display "Media ejected successfully. It is now safe to remove media".
2. Remove media from the camera.

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05 FORMAT MEDIA

OVERVIEW

The DSMC records REDCODE RAW compressed MOTION clips and STILL images, time code, multi-channel audio, and metadata to RED MINI-MAGS and REDMAG 1.8" SSDS.

Record duration depends on resolution, REDCODE, and frame rate. A 64GB REDMAG 1.8" SSD typically provides 24 minutes of 24 FPS 5K RAW recording.

Each clip is recorded with a unique name in a clip folder with the extension .RDC. This folder contains all appropriate information describing the clip, including one or more REDCODE RAW .R3D files and all color grading metadata and other system level metadata such as lens and location information.

The individual clip folders are placed in a folder (root directory) on the digital media. This folder has the extension .RDM. Since the .RDM folder contains all the recorded clips, you can copy all clips from the SSD to other media by simply copying the .RDM folder.

IMPORTANT: After connecting a RED MINI-MAG or REDMAG 1.8" SSD to the camera and BEFORE recording, format the SSD using the camera (even if formatting was previously performed on a computer).

FORMAT (ERASE) MEDIA IN-CAMERA

You must format your SSD (media) before recording to it. Formatting is performed in-camera, although media may be erased on a computer, allowing the camera to just add the necessary project profile and clip log data.

Media formatted in-camera uses a name and root volume in the format:

- Camera Letter + Reel Number + Month + Day + **, where ** represents two random alphanumeric characters generated by the camera to prevent any possibility of duplicate names being created. For example: A001_0512A6.RDM.

IMPORTANT: Media must always be unmounted prior to removal from the camera. This ensures that power is removed from the digital media and any open data files are closed. Failure to properly unmount media may result in lost data or corrupted files.

FORMAT MEDIA

IMPORTANT: Ensure that data is backed up before formatting media, since formatting erases all data on the SSD.

1. Insert the REDMAG 1.8" SSD or RED MINI-MAG into the media slot on a media module (RED MINI-MAG SIDE SSD MODULE, REDMAG 1.8" SSD, or REAR SSD MODULE). Ensure that the RED logo is facing outward (away from camera body). Insert the SSD firmly into its slot, but without using excessive force to prevent damage.

   NOTE: When fully inserted, the SSD protrudes slightly from the SSD slot.

2. When an SSD is inserted into the camera, the camera recognizes if the media is unformatted:
   - **LCD, EVF and external monitors**: The word “NONE” displays twice (when no media is present, “NONE ---” displays).
   - **REDMOTE**: The word “NONE” displays twice (when no media is present, “NONE ---” displays).
   - **DSMC SIDE HANDLE**: The message “NA” displays (when no media present, also displays “NA”).
3. Go to **Menu** > **Media**.

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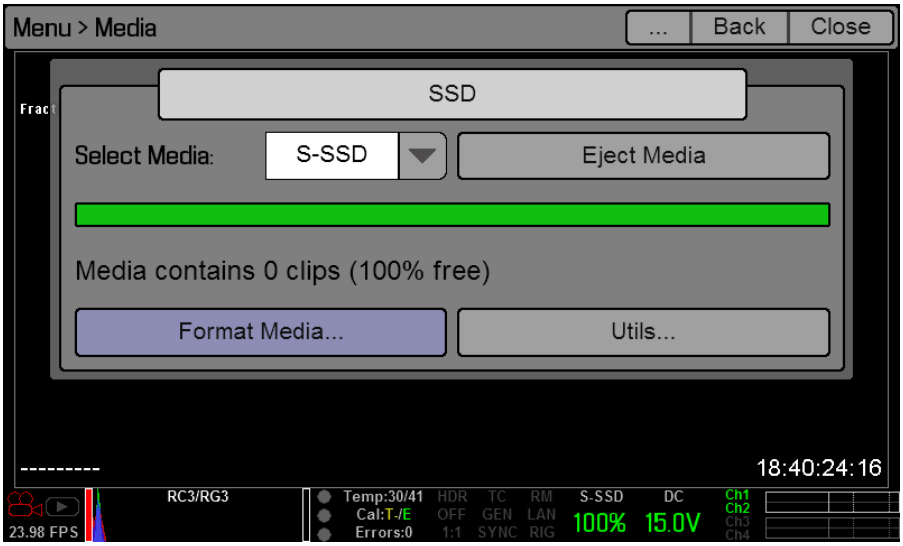
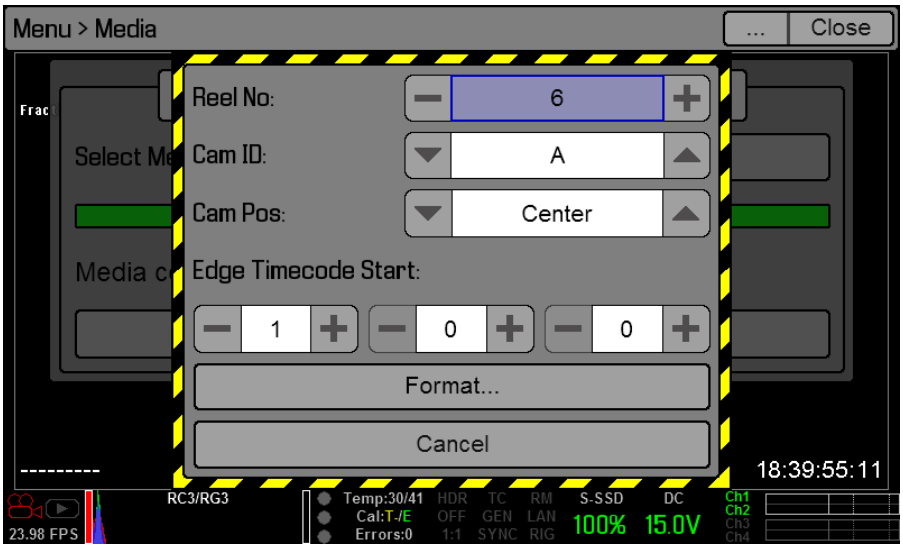
4. Select an option from the **Select Media** drop-down menu.
5. Select **Format Media**.



6. Select the following options to add camera identity information and 3D position properties:
   - **Reel No**: Select a value in the range 1–999.
   - **Cam ID**: Select a letter in the range A-Z to identify the camera.
   - **Cam Pos**: Identify the camera position as **Right**, **Left**, or **Center**. Default is Center.
   - **Edge Timecode Start**: Manually enter an Edge Timecode Start value (seldom used).
7. Select **Format**. (The Format button also displays the number of clips that will be deleted during formatting, if any clips are on the SSD).



8. A dialog box displays and warns you that all clips will be deleted during formatting. Select **Format** to continue.

   Formatting takes about 10 seconds. Once formatting is complete, the Viewfinder output(s) display the following message: “The media was successfully re-formatted and is ready for immediate use”.

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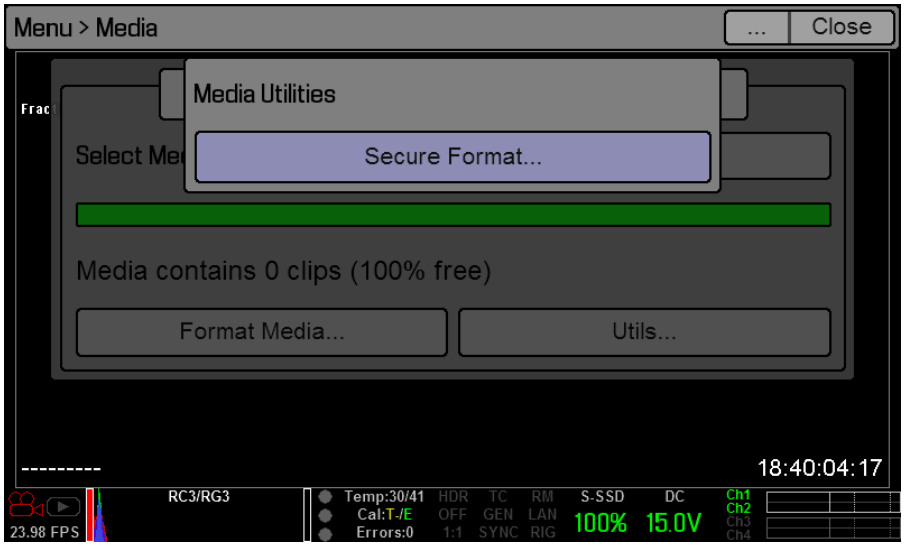
SECURE FORMAT MEDIA

IMPORTANT: Ensure that data is backed up before formatting media, since formatting erases all data on the SSD.

Secure format is a low-level format the rebuilds the SSD file system. It should only be used if the performance of the SSD is in question.

To perform a secure format, follow the instructions below:

1. Go to **Menu** > **Media** > **Utils**.
2. Select **Secure Format**.



3. Continue to format the media as you would for a normal media format. For more information, go to "Format Media" on page 34.

FORMAT (ERASE) MEDIA VIA COMPUTER

RED recommends that you only format your SSD via computer if the SSD cannot mount to the camera.

NOTE: If the media was formatted using a secure format, you cannot format the media using an external source. You must format the media in-camera. For more information on formatting the media in-camera, go to "Format (Erase) Media In-Camera" on page 34.

FORMAT MEDIA (MACINTOSH OS X)

NOTE: A Mac can format an SSD as MS-DOS (FAT) only when the SSD is already formatted as FAT32 or MS-DOS (FAT).

IMPORTANT: Ensure that data is backed up before formatting media, since formatting erases all data on the SSD.

1. Connect the RED MINI-MAG or REDMAG 1.8" SSD to your computer. For more information, go to "Offload Media" on page 40.
2. Open the **Disk Utility**.
3. Select the drive.
4. Click the **Erase** tab.
5. Select **MS-DOS (FAT)** from the **Volume Format** drop-down menu.

   NOTE: The camera will overwrite any name that you add to the SSD.

   IMPORTANT: Before performing the next step, double-check that this is the correct SSD from which you want to erase data.

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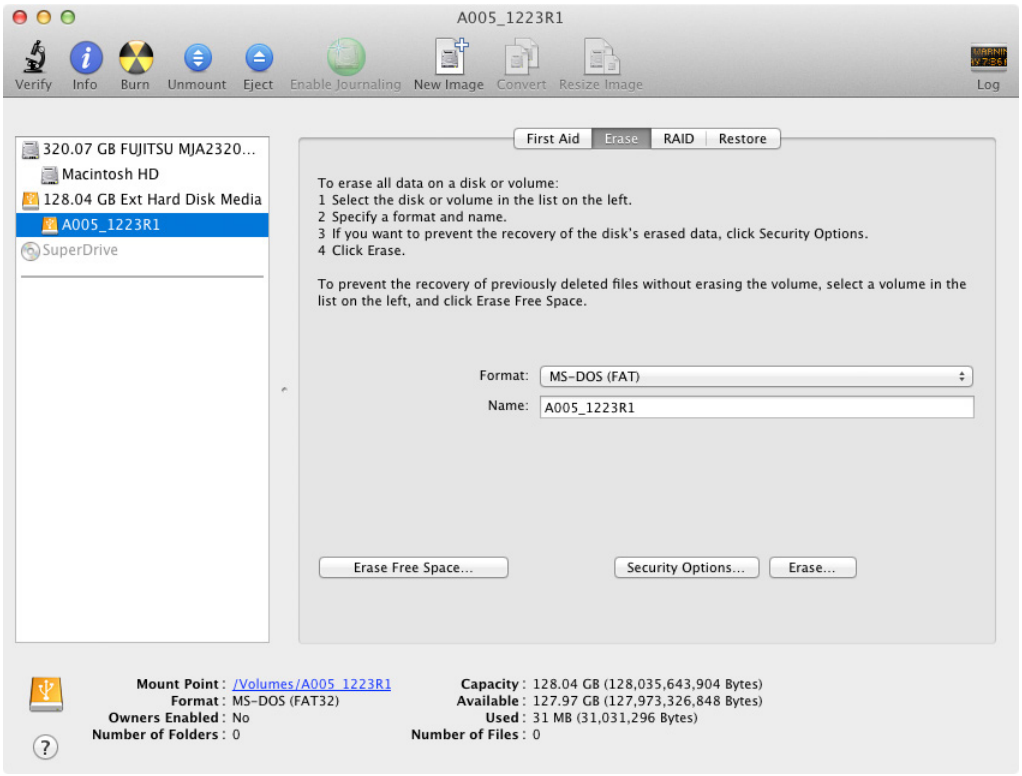
6. Click **Erase**.


A005_1223R1
Verify
Info
Burn
Unmount
Eject
Enable Journaling
New Image
Convert
Resize Image
Log
320.07 GB FUJITSU MJA2320...
Macintosh HD
128.04 GB Ext Hard Disk Media
A005_1223R1
SuperDrive
First Aid
Erase
RAID
Restore
To erase all data on a disk or volume:
1 Select the disk or volume in the list on the left.
2 Specify a format and name.
3 If you want to prevent the recovery of the disk's erased data, click Security Options.
4 Click Erase.
To prevent the recovery of previously deleted files without erasing the volume, select a volume in the list on the left, and click Erase Free Space.
Format: MS-DOS (FAT)
Name: A005_1223R1
Erase Free Space...
Security Options...
Erase...
Mount Point : /Volumes/A005_1223R1
Format : MS-DOS (FAT32)
Owners Enabled : No
Number of Folders : 0
Capacity : 128.04 GB (128,035,643,904 Bytes)
Available : 127.97 GB (127,973,326,848 Bytes)
Used : 31 MB (31,031,296 Bytes)
Number of Files : 0

7. When the dialog box opens, click **Erase**.
8. After the media is erased, click **Unmount**.
9. Eject the SSD from the computer.

   NOTE: Properly eject/unmount the SSD from the computer before physically removing the SSD from the RED STATION or turning off the RED STATION.
10. Remove the SSD from the RED STATION or RED STATION RED MINI-MAG.
11. Format the SSD in-camera. For more information on formatting the media in-camera, go to “Format (Erase) Media In-Camera” on page 34.

FORMAT MEDIA (WINDOWS)

NOTE: A PC can format an SSD as FAT32 only when the SSD capacity is 64GB or less, due to the constraints of the file system.

IMPORTANT: Ensure that data is backed up before formatting media, since formatting erases all data on the SSD.

1. Connect the RED MINI-MAG or REDMAG 1.8" SSD to your computer. For more information, go to “Offload Media” on page 40.
2. Open **My Computer**.
3. Right-click the SSD icon and select **Format**.

   IMPORTANT: Before performing the next step, double-check that this is the correct SSD from which you want to erase data.
4. Select **FAT32** from the **File System** drop-down menu.
5. Click **Start**.
6. Eject the SSD from the computer.

   NOTE: Properly eject/unmount the SSD from the computer before physically removing the SSD from the RED STATION or turning off the RED STATION.
7. Remove the SSD from the RED STATION or RED STATION RED MINI-MAG.

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8. Format the SSD in-camera. For more information on formatting the media in-camera, go to "Format (Erase) Media In-Camera" on page 34.

CLIP NAMING CONVENTIONS

When you record a clip, the camera creates a unique name for the clip folder that uses the format described in the table below:

NAME	DESCRIPTION	EXAMPLE
Camera Letter	**Menu** > **Media** > **Format Media** > **Cam ID**	A
Reel Number	**Menu** > **Media** > **Format Media** > **Reel ID**	004
Clip Number	The clip number increments by 1	C001
Month	Month that the clip is recorded	12
Day	Day that the clip is recorded	23
Two Characters	Two random alphanumeric characters generated by the camera to prevent any possibility of duplicate names being created	6M
RDC	Clip folder extension	RDC

For example, a sequence of clip folders within a media folder on Camera A may look like this:

- A001_C001_05026M.RDC
- A001_C002_0502CE.RDC
- A001_C003_0502R5.RDC

MULTI CAMERA SHOOTS

The scheme provides flexibility to uniquely identify clips from different cameras on a multi-camera shoot. For example, three cameras, slated as camera A, camera B, and camera C respectively, can generate these easily recognizable clips on their respective SSDs:

- A001_C001_0502**.RDC
- B001_C001_0502**.RDC
- C001_C001_0502**.RDC

3D (STEREO) CAMERA SHOOTS

The scheme also allows unique identification of clips from left and right eye cameras on a stereo shoot. For example, two cameras, both slated as Camera S, can generate these easily recognizable clips on their respective SSDs:

- S001_L001_0502**.RDC
- S001_R001_0502**.RDC

METADATA

The following metadata is recorded for each frame of each clip:

- Clip Name
- Time Code
- Date and GMT
- Lens and Shutter Speed/Angle Parameters
- Audio Configuration
- Firmware Version Number

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- Media Serial Number
- LTC User Bits (three 32-bit word reg-dump from ISP)
- S4i Static Data
- S4i Dynamic Data
- GMT Time/Data
- RGB Curves
- Shadow Control
- Luma Curve
- Lens Name, Brand, ID, Near Focus, Far Focus
- Camera Network Name
- Production Name
- Director Name
- DP Name
- Copyright
- Unit
- Camera Name
- Location
- Scene
- Take
- Accelerometer Data
- Gyro Data

MEDIA CAPACITY REMAINING STATUS

The Viewfinder output(s) display the remaining media capacity in the Media indicator:

- **Green**: 11% or more
- **Yellow**: 6%–10%
- **Red**: 5% or less

NOTE: When media is full, the Media Indicator LED on the media module (RED MINI-MAG SIDE SSD MODULE, DSMC 1.8" SSD SIDE MODULE, and REAR SSD MODULE) flashes Red.

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06 OFFLOAD MEDIA

CONNECT RED MINI-MAGS TO YOUR COMPUTER

This section explains how to connect a RED MINI-MAG to your computer using a RED STATION RED MINI-MAG.

NOTE: You can daisy-chain most FireWire storage devices, including RED STATION RED MINI-MAGS and RED STATIONS (for REDMAG 1.8" SSDS).

1. Place RED STATION RED MINI-MAG on a firm, flat surface.
2. Connect the RED STATION RED MINI-MAG to a computer using one of the following data connectors:

   WARNING: Do NOT connect more than one (1) data cable between one (1) RED STATION RED MINI-MAG and the computer.

CONNECTOR	CABLE (INCLUDED WITH RED STATION RED MINI-MAG)	NOTES
eSATA	eSATA Data Cable (24")	After connecting via eSATA, it may take up to 15 seconds for the media to display on the computer.
FireWire 800	▸ RED STATION FW800 Cable (2") ▸ RED STATION FW800 Cable (24")	▸ The computer supplies power to the RED STATION RED MINI-MAG via the FireWire 800 connection, so it's not necessary to use the RED STATION AC POWER ADAPTOR. However, RED recommends using the power adaptor for optimal performance. ▸ You can use the 2" FireWire 800 cables (included with each RED STATION) to daisy-chain the RED STATIONS. Then, use one (1) FireWire 800 cable to connect one (1) RED STATION to the computer. The computer then recognizes each RED STATION through a single FireWire connection.
USB 3.0	RED STATION USB 3.0 CABLE (24")	If connecting to the computer using a different Mini USB cable than provided, power the RED STATION RED MINI-MAG with the RED STATION AC POWER ADAPTOR.

3. If using an eSATA connection, power the RED STATION RED MINI-MAG with either of the following power cables:
   - RED STATION AC POWER ADAPTOR
   - RED STATION USB TO DC POWER CABLE (24")
4. Set the **ON/OFF** switch on the back of the RED STATION RED MINI-MAG to **ON**.
5. Install the RED MINI-MAG in the media slot on the front panel of the RED STATION RED MINI-MAG.
6. The computer recognizes the inserted RED MINI-MAG and displays the RED MINI-MAG as a new drive.
7. To offload data from the SSD, go to "Offload Data From Media to Your Computer" on page 43.

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CONNECT REDMAG 1.8" SSDS TO YOUR COMPUTER

This section explains how to connect a REDMAG 1.8" SSD to your computer using the following RED STATIONS:

- RED STATION REDMAG 1.8"
- RED STATION REDMAG 1.8" (MINI)–ESATA
- RED STATION REDMAG 1.8" (MINI)–USB 3.0
- RED STATION REDMAG 2.5"

NOTE: You can daisy-chain most FireWire storage devices, including RED STATION RED MINI-MAGS and RED STATIONS (for REDMAG 1.8" SSDS).

SET UP RED STATIONS WITH RED STATION BASE

NOTE: The RED STATION BASE provides power to up to three (3) RED STATIONS (excluding the RED STATION REDMAG 1.8" (MINI) and RED STATION RED MINI-MAG) using the RED STATION DC POWER COUPLER (2") that's included with the RED STATION BASE.

1. Place RED STATION BASE on a firm, flat surface.
2. Place up to three (3) of the following RED STATIONS on top of the RED STATION BASE, aligning the four (4) bottom pegs with the four (4) rubber pads on top of the RED STATION BASE:
   - RED STATION REDMAG 1.8"
   - RED STATION REDMAG 2.5"
3. Firmly press down on each RED STATION to insert the pegs into the rubber pads, creating one stacked unit.
4. Plug the RED STATION DC POWER COUPLER (2") into the **POWER** connector on the RED STATION BASE and one **POWER** connector of the RED STATION directly on top of the RED STATION BASE.
5. Use RED STATION DC POWER COUPLERS (2") to daisy-chain any remaining RED STATIONS by plugging the cables into one **POWER** connector on each RED STATION.
6. Connect the RED STATIONS to a computer using one of the following data connectors:

   WARNING: Do NOT connect more than one (1) data cable between one (1) RED STATION and the computer.

CONNECTOR	CABLE (INCLUDED WITH RED STATION)	NOTES
eSATA	eSATA Data Cable (24")	After connecting via eSATA, it may take up to 15 seconds for the media to display on the computer.
FireWire 800	▸ RED STATION FW800 Cable (2") ▸ RED STATION FW800 Cable (24")	You can use the 2" FireWire 800 cables (included with each RED STATION) to daisy-chain the RED STATIONS. Then, use one (1) FireWire 800 cable to connect one (1) RED STATION to the computer. The computer then recognizes each RED STATION through a single FireWire connection.
Mini USB	USB-TO-MINI USB CABLE (24")	NA

7. Set the **ON/OFF** switch on the back of each RED STATION and the RED STATION BASE to **ON**.

   NOTE: When the ON/OFF switches on all of the RED STATIONS are set to ON, the ON/OFF switch on the RED STATION BASE turns the RED STATIONS on/off.
8. Install the REDMAG 1.8" SSD in the media slot on the front panel of the RED STATION.
9. The computer recognizes the inserted SSD media and displays each SSD as a new drive.
10. To offload data from the SSD, go to "Offload Data From Media to Your Computer" on page 43.

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SET UP STANDALONE RED STATIONS (WITHOUT RED STATION BASE)

This section explains how to connect a REDMAG 1.8" SSD to your computer using the following RED STATIONS without a RED STATION BASE:

- RED STATION REDMAG 1.8"
- RED STATION REDMAG 1.8" (MINI)–ESATA
- RED STATION REDMAG 1.8" (MINI)–USB 3.0
- RED STATION REDMAG 2.5"

To offload media, follow the instructions below:

1. Place RED STATION on a firm, flat surface.
2. Connect the RED STATION to a computer using one of the following data connectors:

   WARNING: Do NOT connect more than one (1) data cable between one (1) RED STATION and the computer.

CONNECTOR	CABLE (INCLUDED WITH RED STATION)	NOTES
eSATA	eSATA Data Cable (24")	After connecting via eSATA, it may take up to 15 seconds for the media to display on the computer.
FireWire 800	▸ RED STATION FW800 Cable (2") ▸ RED STATION FW800 Cable (24")	▸ The computer supplies power to the RED STATION via the FireWire 800 connection, so it's not necessary to use the RED STATION AC POWER ADAPTOR. However, RED recommends using the power adaptor for optimal performance. ▸ You can use the 2" FireWire 800 cables (included with each RED STATION) to daisy-chain the RED STATIONS. Then, use one (1) FireWire 800 cable to connect one (1) RED STATION to the computer. The computer then recognizes each RED STATION through a single FireWire connection.
Mini USB	USB-TO-MINI USB CABLE (24")	If connecting to the computer using a different Mini USB cable than provided, power the RED STATION with the RED STATION AC POWER ADAPTOR.
USB 3.0 (RED STATION REDMAG 1.8" (MINI) only)	RED STATION USB 3.0 CABLE (24")	If connecting to the computer using a different Mini USB cable than provided, power the RED STATION with the RED STATION AC POWER ADAPTOR.

3. If using an eSATA connection, power the RED STATION with either of the following power cables:
   - RED STATION AC POWER ADAPTOR
   - RED STATION USB TO DC POWER CABLE (24")
4. If offloading a 512GB REDMAG 1.8" SSD, power the RED STATION with a RED STATION USB TO DC POWER CABLE (24"). Using an eSATA or USB connection alone may not power the RED STATION.
5. Set the **ON/OFF** switch on the back of the RED STATION to **ON**.
6. Install the REDMAG 1.8" SSD in the media slot on the front panel of the RED STATION.
7. The computer recognizes the inserted SSD media and displays the SSD as a new drive.
8. To offload data from the SSD, go to "Offload Data From Media to Your Computer" on page 43.

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OFFLOAD DATA FROM MEDIA TO YOUR COMPUTER

1. Connect the RED MINI-MAG or REDMAG 1.8" SSD to your computer.
2. Copy the complete .RDM folder on the SSD to the archive storage media. This copies all the media and metadata files.

   NOTE: You do not need to copy the log, magazine profile, or presets files, but you can if you choose.
3. Properly eject/unmount the RED MINI-MAG from the computer before physically removing the RED MINI-MAG from the RED STATION RED MINI-MAG or turning off the RED STATION RED MINI-MAG.

RED WATCHDOG

On Mac computers with REDCINE-X PRO installed, RED Watchdog mounts the SSD as read-only by default, which means that you are unable to write files (including firmware upgrade files) to the SSD. RED Watchdog is identified by the RED Coin icon located on the right side of the Mac Menu Bar.

To enable you to read/write to the SSD on a Mac, follow the instructions below:

1. Click the **RED Watchdog** icon.
2. Select **Preferences**.
3. Select **Read-Write** from the **Mount RED Mags** drop-down menu.

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07 TROUBLESHOOT MEDIA

This chapter explains how to troubleshoot media for your DSMC. If you continue to experience issues after troubleshooting, please file a support ticket at support.red.com.

IN-CAMERA ERRORS

NO MEDIA ATTACHED

The message “No Media Attached” displays if media is not present or not formatted when pressing the Record button. To resolve this issue, perform one of the following:

- If the SSD is not connected, connect the SSD to the camera.
- If the SSD is already connected, format the SSD and attempt to record again. For more information about formatting media, go to “Format Media” on page 34.

RECORDING HALTED: RECORD ERROR–SHUTDOWN

The message “Recording Halted: Record Error–Shutdown” displays if the SSD is removed while recording or the connection to the DSMC is interrupted during recording. To resolve this issue, follow the instructions below:

1. Power down the camera.
2. Remove the SSD module from the camera.
3. Inspect connectors for damage.
4. Reconnect the SSD module to the camera and install the SSD.
5. Power up the camera.
6. Ensure that the SSD is recognized; reformat the SSD if necessary.
7. Resume recording.

NOTE: DO NOT remove the SSD while the camera is recording.

NOTE: If the problem persists, try recording with another SSD.

MEDIA DOES NOT MOUNT TO CAMERA

If the media does not mount to your DSMC, perform one or more of the following:

- Reformat the SSD on the computer. For more information about formatting media on the computer, go to “Format (Erase) Media Via Computer” on page 36.
- Perform a system restore, and then remove and reattach the RED MINI-MAG SIDE SSD MODULE, DSMC 1.8" SSD SIDE MODULE, or REAR SSD MODULE.
- Use an alternate RED MINI-MAG SIDE SSD MODULE, DSMC 1.8" SSD SIDE MODULE, or REAR SSD MODULE.
- Use an alternate DSMC.

WARNING: If the problem persists after reformatting the SSD and attempting to mount the SSD on an alternate DSMC, the SSD is likely damaged or otherwise compromised. DO NOT attempt to record to an SSD that is experiencing these problems. Any footage that is recorded to the SSD may be lost, damaged, or unrecoverable.

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MEDIA DOES NOT MOUNT TO COMPUTER

If the media does not mount to your computer via a RED STATION RED MINI-MAG, RED STATION REDMAG 1.8", RED STATION REDMAG 1.8" (MINI), or RED STATION REDMAG 2.5" perform one or more of the following:

- Turn the RED STATION off and on using the On/Off Switch on the rear panel of the RED STATION.
- Disconnect and reconnect all cables.
- Use an alternate data cable or data connection.
- Use an alternate power cable.
- Use an alternate port on your computer.
- Use an alternate computer.
- If connecting to your computer via eSATA, ensure that the RED STATION is powered via the RED STATION AC POWER ADAPTOR or the RED STATION USB TO DC POWER CABLE (24").
- If connecting a RED STATION REDMAG 1.8" (MINI) with a 48GB or 512GB REDMAG 1.8" SSD via a USB 2.0 or USB 3.0 connection, ensure that the RED STATION REDMAG 1.8" (MINI) is powered via the RED STATION AC POWER ADAPTOR or the RED STATION USB TO DC POWER CABLE (24").
- If there are no clips on the SSD, connect the SSD to the camera and reformat the SSD. For more information about formatting media, go to “Format Media” on page 34.
- If using a Mac, the SSD may be recognized by the computer but not mounted. Launch the **Disk Utility** application, select the SSD in the left panel, and click **Mount** in the toolbar.

CANNOT FORMAT SSD ON COMPUTER

RED recommends that you only format your SSD via computer if the SSD cannot mount to the camera. The following limitations to formatting an SSD via computer exist:

- A Mac can format an SSD as MS-DOS (FAT) only when the SSD is already formatted as FAT32 or MS-DOS (FAT).
- A PC can format an SSD as FAT32 only when the SSD capacity is 64GB or less, due to the constraints of the file system.

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A TECHNICAL SPECIFICATIONS

RED MINI-MAG

SPECIFICATION	DESCRIPTION
Storage Capacity	512GB
Dimensions	Height: 1.78" (45 mm) Width: 0.32" (8 mm) Depth: 2.89" (73 mm)
Weight	0.11 lbs (0.05 kg)
Operating Temperature Range	10˚C to 40˚C (50˚F to 104˚F)
Storage Temperature Range	-20˚C to +50˚C (-4˚F to +122˚F)
Operating Humidity Range	20% to 80%, non-condensing
Storage Humidity Range	10% to 90%, non-condensing

RED MINI-MAG SIDE SSD MODULE

SPECIFICATION	DESCRIPTION
Dimensions	Height: 5.39" (137 mm) Width: 1.18" (30 mm) Depth: 3.54" (90 mm)
Weight	0.59 lbs (0.26 kg)
Material	Aluminum
Operating Temperature Range	10˚C to 40˚C (50˚F to 104˚F)
Storage Temperature Range	-20˚C to +50˚C (-4˚F to +122˚F)
Operating Humidity Range	20% to 80%, non-condensing
Storage Humidity Range	10% to 90%, non-condensing

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RED STATION RED MINI-MAG

SPECIFICATION	DESCRIPTION
Dimensions	Height: 1.04" (22 mm) Width: 3.54" (90 mm) Depth: 4.60" (117 mm)
Weight	0.62 lbs (0.28 kg)
Material	Aluminum
Operating Temperature Range	10˚C to 40˚C (50˚F to 104˚F)
Storage Temperature Range	-20˚C to +50˚C (-4˚F to +122˚F)
Operating Humidity Range	20% to 80%, non-condensing
Storage Humidity Range	10% to 90%, non-condensing
Input Supply Voltage	5 VDC, 2 A
Environment	No exposure to heat No exposure to vibration No exposure to strong electric or magnetic fields Dust-Free
Power Cables	RED STATION USB-TO-DC POWER CABLE (24") (790-0316)
	RED STATION AC POWER ADAPTOR (790-0292)
	RED STATION DC POWER COUPLER CABLE (2") (790-0249)
	RED STATION FW800 CABLE (24") (790-0251)
	RED STATION FW800 CABLE (2") (790-0253)

REDMAG 1.8" SSD

SPECIFICATION	DESCRIPTION
Storage Capacities	48GB, 64GB, 128GB, 256GB, and 512GB
Dimensions	Height: 2.27" (58 mm) Width: 0.35" (9 mm) Depth: 4.15" (105 mm)
Weight	0.21 lbs (0.095 kg)
Operating Temperature Range	10˚C to 40˚C (50˚F to 104˚F)
Storage Temperature Range	-20˚C to +50˚C (-4˚F to +122˚F)
Operating Humidity Range	20% to 80%, non-condensing
Storage Humidity Range	10% to 90%, non-condensing

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DSMC 1.8" SSD SIDE MODULE

SPECIFICATION	DESCRIPTION
Dimensions	Height: 5.39" (137 mm) Width: 1.18" (30 mm) Depth: 3.54" (90 mm)
Weight	0.62 lbs (0.28 kg)
Material	Aluminum
Operating Temperature Range	10˚C to 40˚C (50˚F to 104˚F)
Storage Temperature Range	-20˚C to +50˚C (-4˚F to +122˚F)
Operating Humidity Range	20% to 80%, non-condensing
Storage Humidity Range	10% to 90%, non-condensing

RED STATION REDMAG 1.8"

SPECIFICATION	DESCRIPTION
Dimensions	Height: 1.48" (37.65 mm) Width: 5.33" (135.4 mm) Depth: 4.78" (121.3 mm)
Weight	0.95 lbs (0.43 kg)
Material	Aluminum
Operating Temperature Range	10˚C to 40˚C (50˚F to 104˚F)
Storage Temperature Range	-20˚C to +50˚C (-4˚F to +122˚F)
Operating Humidity Range	20% to 80%, non-condensing
Storage Humidity Range	10% to 90%, non-condensing
Input Supply Voltage	5 VDC, 2 A
Environment	No exposure to heat No exposure to vibration No exposure to strong electric or magnetic fields Dust-Free
Power Cables	RED STATION AC POWER ADAPTOR (790-0292)
	RED STATION DC POWER COUPLER CABLE (2") (790-0249)
	RED USB-TO-MINI USB CABLE (24") (790-0315)
	RED USB-TO-MINI USB CABLE (6') (790-0230)
	RED STATION USB-TO-DC POWER CABLE (24") (790-0316)
	RED STATION FW800 CABLE (24") (790-0251)
	RED STATION FW800 CABLE (2") (790-0253)

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RED STATION REDMAG 2.5"

SPECIFICATION	DESCRIPTION
Dimensions	Height: 1.48" (37.65 mm) Width: 5.33" (135.4 mm) Depth: 4.78" (121.3 mm)
Weight	0.95 lbs (0.43 kg)
Material	Aluminum
Operating Temperature Range	10˚C to 40˚C (50˚F to 104˚F)
Storage Temperature Range	-20˚C to +50˚C (-4˚F to +122˚F)
Operating Humidity Range	20% to 80%, non-condensing
Storage Humidity Range	10% to 90%, non-condensing
Input Supply Voltage	5 VDC, 2 A
Environment	No exposure to heat No exposure to vibration No exposure to strong electric or magnetic fields Dust-Free
Power Cables	RED STATION AC POWER ADAPTOR (790-0292)
	RED STATION DC POWER COUPLER CABLE (2") (790-0249)
	RED USB-TO-MINI USB CABLE (24") (790-0315)
	RED USB-TO-MINI USB CABLE (6') (790-0230)
	RED STATION USB-TO-DC POWER CABLE (24") (790-0316)
	RED STATION FW800 CABLE (24") (790-0251)
	RED STATION FW800 CABLE (2") (790-0253)

RED STATION BASE

SPECIFICATION	DESCRIPTION
Dimensions	Height: 1.75" (44.45 mm) Width: 5.33" (135.4 mm) Depth: 4.78" (121.3 mm)
Weight	0.95 lbs (0.43 kg)
Material	Aluminum
Operating Temperature Range	10˚C to 40˚C (50˚F to 104˚F)
Storage Temperature Range	-20˚C to +50˚C (-4˚F to +122˚F)
Operating Humidity Range	20% to 80%, non-condensing
Storage Humidity Range	10% to 90%, non-condensing
Input Supply Voltage	5 VDC, 5 A
Power Cables	RED STATION AC POWER ADAPTOR (790-0292)
	RED STATION USB TO DC POWER CABLE (24") (790-0316)

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B REDCODE OPTIONS

The tables in this appendix describe the maximum available REDCODE compression ratio for each format and frame rate combination. The REDCODE values in this appendix are based on DSMC firmware v5.1.34.

The number in each body cell refers to the number to the left of the colon in the REDCODE compression ratio (the "x" of "x:1"). For example: With a RED EPIC DRAGON and a RED MINI-MAG, when your project format is 5K and your capture frame rate is 24 FPS, the maximum available REDCODE compression ratio is 3:1.

NOTE: The REDCODE values in this appendix do not apply when Sensor Sync Mode (Menu > Settings > Setup > GPIO/Sync) is set to MoCo. When using MoCo, you must set the frame rate to be at least two times (2x) the fastest trigger rate used. A high frame rate usually increases the compression, but when you're using MoCo, REDCODE is calculated based on FPS/2. Therefore, if you are in MoCo mode, and you set the frame rate to 100.83 FPS, the maximum REDCODE is calculated based on a frame rate of 50.415 FPS.

RED MINI-MAG REDCODE OPTIONS

To see the RED MINI-MAG REDCODE options for SCARLET cameras, go to "SCARLET MYSTERIUM-X REDCODE Options" on page 64.

EPIC DRAGON: RED MINI-MAG 512GB

This table omits rows for the anamorphic formats, since the maximum REDCODE and frame rate pairing for each anamorphic format and the corresponding non-anamorphic format is the same.

	CAPTURE FRAME RATE (FPS)																			
FORMAT	**12**	**24**	**25**	**30**	**40**	**48**	**50**	**60**	**72**	**75**	**90**	**96**	**100**	**120**	**150**	**175**	**210**	**250**	**288**	**300**
6K	2	4	5	5	7	8	9	10	12	13										
6K 2:1	2	4	4	5	7	8	8	10	12	12										
6K WS	2	4	4	4	6	7	7	8	10	10	12	13	14							
6K HD	2	4	4	5	6	7	8	9	11	11										
5.5K	2	4	4	5	6	7	7	9	10	11										
5.5K 2:1	2	4	4	4	6	7	7	8	10	10	12									
5.5K WS	2	3	3	4	5	6	6	7	8	9	10	11	12							
5.5K HD	2	4	4	4	6	7	7	8	10	10										
5K	2	3	3	4	5	6	6	7	9	9	11	12								
5K 2:1	2	3	3	4	5	6	6	7	8	9	10	11	12							
5K WS	2	3	3	3	4	5	5	6	7	7	9	9	10	12						

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	CAPTURE FRAME RATE (FPS)																			
FORMAT	**12**	**24**	**25**	**30**	**40**	**48**	**50**	**60**	**72**	**75**	**90**	**96**	**100**	**120**	**150**	**175**	**210**	**250**	**288**	**300**
5K HD	2	3	3	4	5	6	6	7	8	9	10	11								
4.5K	2	3	3	3	4	5	5	6	7	8	9	9	10							
4.5K 2:1	2	3	3	3	4	5	5	6	7	7	8	9	9							
4.5K WS	2	2	2	3	3	4	4	5	6	6	7	8	8	9						
4.5K HD	2	3	3	3	4	5	5	6	7	7	8	9	9							
4.5K 3:2	2	3	3	4	5	5	6	7	8	8	10									
4K	2	2	2	3	3	4	4	5	6	6	7	8	8	9						
4K 2:1	2	2	2	3	3	4	4	5	6	6	7	7	7	9						
4K WS	2	2	2	2	3	3	3	4	5	5	6	6	6	8	10					
4K HD	2	2	2	3	3	4	4	5	6	6	7	7	8	9						
4K 3:2	2	2	3	3	4	4	5	5	6	7	8	8	9							
4K 4:3	2	3	3	3	4	5	5	6	7	8	9									
4K 5:4	2	3	3	3	4	5	5	6	8	8										
3.5K	2	2	2	2	3	3	3	4	5	5	6	6	6	7						
3.5K 2:1	2	2	2	2	3	3	3	4	4	5	5	6	6	7						
3.5K WS	2	2	2	2	2	3	3	3	4	4	5	5	5	6	8					
3.5K HD	2	2	2	2	3	3	3	4	4	4	5	6	6	7						
3.5K 3:2	2	2	2	2	3	4	4	4	5	5	6	7	7							
3.5K 4:3	2	2	2	3	3	4	4	5	6	6	7	7	8							
3.5K 5:4	2	2	2	3	4	4	4	5	6	6	7	8								
3K	2	2	2	2	2	3	3	3	4	4	4	5	5	6	7					
3K 2:1	2	2	2	2	2	2	3	3	3	4	4	4	5	5	7					
3K WS	2	2	2	2	2	2	2	3	3	3	4	4	4	5	6	7				
3K HD	2	2	2	2	2	2	2	3	3	3	4	4	4	5	7					
3K 3:2	2	2	2	2	3	3	3	4	4	5	5	6	6	7						
3K 4:3	2	2	2	2	3	3	3	4	4	4	5	6	6	7						
3K 5:4	2	2	2	2	3	3	3	4	5	5	6	6	6							
2.5K	2	2	2	2	2	2	2	2	3	3	3	3	3	4	5	6				
2.5K 2:1	2	2	2	2	2	2	2	2	2	3	3	3	3	4	5	6				

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	CAPTURE FRAME RATE (FPS)																			
FORMAT	**12**	**24**	**25**	**30**	**40**	**48**	**50**	**60**	**72**	**75**	**90**	**96**	**100**	**120**	**150**	**175**	**210**	**250**	**288**	**300**
2.5K WS	2	2	2	2	2	2	2	2	2	2	3	3	3	3	4	5	6			
2.5K HD	2	2	2	2	2	2	2	2	2	3	3	3	3	4	5	5				
2.5K 3:2	2	2	2	2	2	2	2	2	3	3	3	4	4	4	5					
2.5K 4:3	2	2	2	2	2	2	2	3	3	3	4	4	4	5						
2.5K 5:4	2	2	2	2	2	2	2	3	3	3	4	4	4	5						
2K	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	4	5			
2K 2:1	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	4	5			
2K WS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	4	5	6	6
2K HD	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	4	5			
2K 3:2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	4	4				
2K 4:3	2	2	2	2	2	2	2	2	2	2	3	3	3	3	4	5				
2K 5:4	2	2	2	2	2	2	2	2	2	2	3	3	3	4	4					

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EPIC MYSTERIUM-X: RED MINI-MAG 512GB

	CAPTURE FRAME RATE (FPS)																				
FORMAT	**12**	**24**	**25**	**30**	**40**	**48**	**50**	**60**	**72**	**75**	**90**	**96**	**100**	**120**	**150**	**175**	**210**	**250**	**288**	**300**	**400**
5K	3	3	3	3	4	5	5	6	8	8	9	10									
5K 2:1	3	3	3	3	4	5	5	6	7	8	9	10	10								
5K WS	3	3	3	3	4	4	4	5	6	6	8	8	8	10							
5K HD	3	3	3	3	4	5	5	6	7	8	9	9									
5K ANA	3	3	3	3	3	4	4	5	5	6	7	7									
4K	3	3	3	3	3	4	4	4	5	5	6	7	7	8							
4K WS	3	3	3	3	3	3	3	4	4	4	5	5	6	7	8						
4K HD	3	3	3	3	3	3	4	4	5	5	6	6	7	8							
3K	3	3	3	3	3	3	3	3	3	3	4	4	4	5	6						
3K WS	3	3	3	3	3	3	3	3	3	3	3	3	3	4	5	6					
3K HD	3	3	3	3	3	3	3	3	3	3	4	4	4	5	6						
2K	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4				
2K WS	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	5	5	
2K HD	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4				
1K WS	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4
1K HD	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	

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REDMAG 1.8" SSD REDCODE OPTIONS

To see the REDMAG 1.8" SSD REDCODE options for SCARLET cameras, go to "SCARLET MYSTERIUM-X REDCODE Options" on page 64.

NOTE: RED does not publish the REDCODE and frame rate pairings for the following REDMAG 1.8" SSDS:

- 64GB
- 256GB

EPIC DRAGON: REDMAG 1.8" SSD 48GB

This table omits rows for the anamorphic formats, since the maximum REDCODE and frame rate pairing for each anamorphic format and the corresponding non-anamorphic format is the same.

	CAPTURE FRAME RATE (FPS)																			
FORMAT	**12**	**24**	**25**	**30**	**40**	**48**	**50**	**60**	**72**	**75**	**90**	**96**	**100**	**120**	**150**	**175**	**210**	**250**	**288**	**300**
6K	6	11	11	13	18															
6K 2:1	6	11	11	13	17															
6K WS	5	9	9	11	15	17	18													
6K HD	5	10	10	12	16															
5.5 K	5	9	10	12	15	18														
5.5K 2:1	5	9	9	11	14	17	18													
5.5K WS	4	8	8	9	12	15	15	18												
5.5K HD	5	9	9	11	14	17	18													
5K	4	8	8	10	13	15	16													
5K 2:1	4	8	8	9	12	15	15	18												
5K WS	3	6	7	8	10	12	13	15	18											
5K HD	4	7	8	9	12	14	15	18												
4.5K	3	6	7	8	10	12	13	15	18											
4.5K 2:1	3	6	6	8	10	12	12	15	17	18										
4.5K WS	3	5	5	6	8	10	10	12	15	15	18									
4.5K HD	3	6	6	8	10	12	12	15	17	18										
4.5K 3:2	4	7	7	9	12	14	14	17												
4K	3	5	5	6	8	10	10	12	15	15	18									
4K 2:1	3	5	5	6	8	9	10	12	14	14	17	18								
4K WS	2	4	4	5	7	8	8	10	12	12	15	16	16							
4K HD	3	5	5	6	8	9	10	12	14	15	17	18								

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	CAPTURE FRAME RATE (FPS)																			
FORMAT	**12**	**24**	**25**	**30**	**40**	**48**	**50**	**60**	**72**	**75**	**90**	**96**	**100**	**120**	**150**	**175**	**210**	**250**	**288**	**300**
4K 3:2	3	6	6	7	9	11	12	14	16	17										
4K 4:3	3	6	7	8	10	12	13	15	18											
4K 5:4	4	7	7	8	11	13	14	16												
3.5K	2	4	4	5	6	8	8	9	11	12	14	15	15	18						
3.5K 2:1	2	4	4	5	6	7	8	9	11	11	13	14	15	18						
3.5K WS	2	3	4	4	5	6	7	8	9	10	11	12	13	15						
3.5K HD	2	4	4	5	6	7	8	9	11	11	13	14	15	17						
3.5K 3:2	3	5	5	6	7	9	9	11	13	13	16	17	17							
3.5K 4:3	3	5	5	6	8	10	10	12	14	15	17									
3.5K 5:4	3	5	6	7	9	10	11	13	15	16										
3K	2	3	3	4	5	6	6	7	9	9	11	11	12	14	18					
3K 2:1	2	3	3	4	5	6	6	7	8	9	10	11	11	13	17					
3K WS	2	3	3	3	4	5	5	6	7	7	9	9	9	11	14	17				
3K HD	2	3	3	4	5	6	6	7	8	8	10	11	11	13	17					
3K 3:2	2	4	4	5	6	8	8	9	11	11	14	15	15	18						
3K 4:3	2	4	4	5	6	7	8	9	11	11	13	14	15	17						
3K 5:4	2	4	4	5	7	8	8	10	11	12	14	15	16							
2.5K	2	2	2	3	4	4	4	5	6	6	7	8	8	10	12	15				
2.5K 2:1	2	2	2	3	3	4	4	5	6	6	7	7	8	9	12	14				
2.5K WS	2	2	2	2	3	3	4	4	5	5	6	6	7	8	10	12	15			
2.5K HD	2	2	2	3	3	4	4	5	6	6	7	7	8	9	12	14				
2.5K 3:2	2	3	3	3	4	5	5	6	7	7	8	9	9	11	14					
2.5K 4:3	2	3	3	3	4	5	5	6	7	8	9	10	10	12						
2.5K 5:4	2	3	3	4	5	5	6	7	8	8	10	10	11	13						
2K	2	2	2	2	3	3	3	4	4	4	5	5	6	7	8	10	12			
2K 2:1	2	2	2	2	2	3	3	3	4	4	5	5	5	6	8	9	12			
2K WS	2	2	2	2	2	2	3	3	3	4	4	4	5	5	7	8	10	12	15	15
2K HD	2	2	2	2	2	3	3	3	4	4	5	5	5	6	8	9	12			
2K 3:2	2	2	2	2	3	3	3	4	5	5	6	6	6	7	9	11				

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	CAPTURE FRAME RATE (FPS)																			
FORMAT	**12**	**24**	**25**	**30**	**40**	**48**	**50**	**60**	**72**	**75**	**90**	**96**	**100**	**120**	**150**	**175**	**210**	**250**	**288**	**300**
2K 4:3	2	2	2	2	3	4	4	4	5	5	6	7	7	8	10	12				
2K 5:4	2	2	2	3	3	4	4	5	5	6	7	7	7	9	11					

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EPIC DRAGON: REDMAG 1.8" SSD 128GB

This table omits rows for the anamorphic formats, since the maximum REDCODE and frame rate pairing for each anamorphic format and the corresponding non-anamorphic format is the same.

	CAPTURE FRAME RATE (FPS)																			
FORMAT	**12**	**24**	**25**	**30**	**40**	**48**	**50**	**60**	**72**	**75**	**90**	**96**	**100**	**120**	**150**	**175**	**210**	**250**	**288**	**300**
6K	3	5	6	7	9	10	11	13	15	16										
6K 2:1	3	5	5	6	8	10	10	12	15	15										
6K WS	2	4	5	5	7	8	9	10	12	13	15	16	17							
6K HD	3	5	5	6	8	9	10	11	14	14										
5.5 K	3	5	5	6	7	9	9	11	13	13										
5.5K 2:1	2	4	5	5	7	8	9	10	12	13	15									
5.5K WS	2	4	4	5	6	7	7	9	10	11	13	14	14							
5.5K HD	2	4	5	5	7	8	9	10	12	13										
5K	2	4	4	5	6	7	8	9	11	11	14	14								
5K 2:1	2	4	4	5	6	7	7	9	10	11	13	14	14							
5K WS	2	3	3	4	5	6	6	7	9	9	11	12	12	14						
5K HD	2	4	4	5	6	7	7	9	10	11	13	14								
4.5K	2	3	3	4	5	6	6	8	9	9	11	12	12							
4.5K 2:1	2	3	3	4	5	6	6	7	8	9	10	11	12							
4.5K WS	2	3	3	3	4	5	5	6	7	8	9	9	10	12						
4.5K HD	2	3	3	4	5	6	6	7	8	9	10	11	11							
4.5K 3:2	2	4	4	4	6	7	7	8	10	10	12									
4K	2	3	3	3	4	5	5	6	7	8	9	9	10	12						
4K 2:1	2	3	3	3	4	5	5	6	7	7	8	9	9	11						
4K WS	2	2	2	3	3	4	4	5	6	6	7	8	8	9	12					
4K HD	2	3	3	3	4	5	5	6	7	7	8	9	9	11						
4K 3:2	2	3	3	4	5	5	6	7	8	8	10	10	11							
4K 4:3	2	3	3	4	5	6	6	8	9	9	11									
4K 5:4	2	3	4	4	5	6	7	8	9	10										
3.5K	2	2	2	3	3	4	4	5	6	6	7	7	8	9						
3.5K 2:1	2	2	2	3	3	4	4	5	5	6	7	7	7	9						

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	CAPTURE FRAME RATE (FPS)																			
FORMAT	**12**	**24**	**25**	**30**	**40**	**48**	**50**	**60**	**72**	**75**	**90**	**96**	**100**	**120**	**150**	**175**	**210**	**250**	**288**	**300**
3.5K WS	2	2	2	2	3	3	3	4	5	5	6	6	6	7	9					
3.5K HD	2	2	2	2	3	4	4	4	5	5	6	7	7	8						
3.5K 3:2	2	2	2	3	4	4	4	5	6	6	8	8	8							
3.5K 4:3	2	3	3	3	4	5	5	6	7	7	8	9	9							
3.5K 5:4	2	3	3	3	4	5	5	6	7	8	9	10								
3K	2	2	2	2	3	3	3	4	4	4	5	6	6	7	9					
3K 2:1	2	2	2	2	3	3	3	4	4	4	5	5	6	7	8					
3K WS	2	2	2	2	2	3	3	3	4	4	4	5	5	6	7	8				
3K HD	2	2	2	2	2	3	3	3	4	4	5	5	5	6	8					
3K 3:2	2	2	2	3	3	4	4	5	5	6	7	7	7	9						
3K 4:3	2	2	2	2	3	4	4	4	5	5	6	7	7	8						
3K 5:4	2	2	2	3	3	4	4	5	6	6	7	7	8							
2.5K	2	2	2	2	2	2	2	3	3	3	4	4	4	5	6	7				
2.5K 2:1	2	2	2	2	2	2	2	3	3	3	4	4	4	5	6	7				
2.5K WS	2	2	2	2	2	2	2	2	3	3	3	3	3	4	5	6	7			
2.5K HD	2	2	2	2	2	2	2	3	3	3	4	4	4	5	6	7				
2.5K 3:2	2	2	2	2	2	2	3	3	3	4	4	4	5	5	7					
2.5K 4:3	2	2	2	2	2	3	3	3	4	4	5	5	5	6						
2.5K 5:4	2	2	2	2	2	3	3	3	4	4	5	5	5	6						
2K	2	2	2	2	2	2	2	2	2	2	3	3	3	3	4	5	6			
2K 2:1	2	2	2	2	2	2	2	2	2	2	3	3	3	3	4	5	6			
2K WS	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	4	5	6	7	8
2K HD	2	2	2	2	2	2	2	2	2	2	2	3	3	3	4	5	6			
2K 3:2	2	2	2	2	2	2	2	2	2	2	3	3	3	4	5	5				
2K 4:3	2	2	2	2	2	2	2	2	3	3	3	3	3	4	5	6				
2K 5:4	2	2	2	2	2	2	2	2	3	3	3	4	4	4	5					

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EPIC DRAGON: REDMAG 1.8" SSD 512GB

This table omits rows for the anamorphic formats, since the maximum REDCODE and frame rate pairing for each anamorphic format and the corresponding non-anamorphic format is the same.

	CAPTURE FRAME RATE (FPS)																			
	12	**24**	**25**	**30**	**40**	**48**	**50**	**60**	**72**	**75**	**90**	**96**	**100**	**120**	**150**	**175**	**210**	**250**	**288**	**300**
6K	3	5	5	6	7	9	9	11	13	14										
6K 2:1	3	5	5	6	7	9	9	11	13	13										
6K WS	2	4	4	5	6	7	8	9	11	11	13	14	15							
6K HD	2	4	4	5	7	8	8	10	12	12										
5.5 K	2	4	4	5	6	8	8	9	11	12										
5.5K 2:1	2	4	4	5	6	7	8	9	11	11	13									
5.5K WS	2	3	3	4	5	6	6	8	9	9	11	12	12							
5.5K HD	2	4	4	5	6	7	8	9	11	11										
5K	2	4	4	4	6	7	7	8	10	10	12	13								
5K 2:1	2	3	3	4	5	6	6	8	9	9	11	12	12							
5K WS	2	3	3	4	5	5	6	7	8	8	10	10	11	13						
5K HD	2	3	3	4	5	6	6	8	9	9	11	12								
4.5K	2	3	3	4	5	5	6	7	8	8	10	10	11							
4.5K 2:1	2	3	3	3	4	5	5	6	7	8	9	10	10							
4.5K WS	2	2	3	3	4	4	5	5	6	7	8	8	9	10						
4.5K HD	2	3	3	3	4	5	5	6	7	8	9	10	10							
4.5K 3:2	2	3	3	4	5	6	6	7	9	9	11									
4K	2	2	3	3	4	4	5	5	6	7	8	8	9	10						
4K 2:1	2	2	2	3	4	4	4	5	6	6	7	8	8	10						
4K WS	2	2	2	2	3	4	4	4	5	5	6	7	7	8	10					
4K HD	2	2	2	3	4	4	4	5	6	6	7	8	8	10						
4K 3:2	2	3	3	3	4	5	5	6	7	7	9	9	9							
4K 4:3	2	3	3	4	5	5	6	7	8	8	10									
4K 5:4	2	3	3	4	5	6	6	7	8	9										
3.5K	2	2	2	2	3	3	4	4	5	5	6	6	7	8						
3.5K 2:1	2	2	2	2	3	3	3	4	5	5	6	6	6	7						

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	CAPTURE FRAME RATE (FPS)																			
	12	**24**	**25**	**30**	**40**	**48**	**50**	**60**	**72**	**75**	**90**	**96**	**100**	**120**	**150**	**175**	**210**	**250**	**288**	**300**
3.5K WS	2	2	2	2	2	3	3	3	4	4	5	5	5	6	8					
3.5K HD	2	2	2	2	3	3	3	4	5	5	6	6	6	7						
3.5K 3:2	2	2	2	3	3	4	4	5	5	6	7	7	7							
3.5K 4:3	2	2	2	3	4	4	4	5	6	6	7	8	8							
3.5K 5:4	2	2	3	3	4	4	5	5	6	7	8	8								
3K	2	2	2	2	2	3	3	3	4	4	5	5	5	6	8					
3K 2:1	2	2	2	2	2	3	3	3	4	4	4	5	5	6	7					
3K WS	2	2	2	2	2	2	2	3	3	3	4	4	4	5	6	7				
3K HD	2	2	2	2	2	3	3	3	4	4	4	5	5	6	7					
3K 3:2	2	2	2	2	3	3	3	4	5	5	6	6	6	8						
3K 4:3	2	2	2	2	3	3	3	4	5	5	6	6	6	7						
3K 5:4	2	2	2	2	3	3	4	4	5	5	6	6	7							
2.5K	2	2	2	2	2	2	2	2	3	3	3	3	4	4	5	6				
2.5K 2:1	2	2	2	2	2	2	2	2	3	3	3	3	3	4	5	6				
2.5K WS	2	2	2	2	2	2	2	2	2	2	3	3	3	3	4	5	6			
2.5K HD	2	2	2	2	2	2	2	2	3	3	3	3	3	4	5	6				
2.5K 3:2	2	2	2	2	2	2	2	3	3	3	4	4	4	5	6					
2.5K 4:3	2	2	2	2	2	2	2	3	3	3	4	4	4	5						
2.5K 5:4	2	2	2	2	2	2	3	3	3	4	4	4	5	5						
2K	2	2	2	2	2	2	2	2	2	2	2	2	3	3	4	4	5			
2K 2:1	2	2	2	2	2	2	2	2	2	2	2	2	2	3	4	4	5			
2K WS	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	4	4	5	6	7
2K HD	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	4	5			
2K 3:2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	4	5				
2K 4:3	2	2	2	2	2	2	2	2	2	2	3	3	3	4	4	5				
2K 5:4	2	2	2	2	2	2	2	2	2	3	3	3	3	4	5					

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EPIC MYSTERIUM-X: REDMAG 1.8" SSD 48GB

	CAPTURE FRAME RATE (FPS)																				
FORMAT	**12**	**24**	**25**	**30**	**40**	**48**	**50**	**60**	**72**	**75**	**90**	**96**	**100**	**120**	**150**	**175**	**210**	**250**	**288**	**300**	**400**
5K	4	7	7	8	11	13	14	16													
5K 2:1	4	7	7	8	11	13	13	16													
5K WS	3	6	6	7	9	11	11	13	16	16											
5K HD	3	6	7	8	10	12	13	15	18												
5K ANA	3	5	5	6	8	9	10	11	14	14	17	18									
4K	3	5	5	6	7	9	9	11	13	13	16	17	18								
4K WS	3	4	4	5	6	7	7	9	10	11	13	14	14	17							
4K HD	3	4	5	5	7	8	9	10	12	13	15	16	17								
3K	3	3	3	3	4	5	5	6	7	8	9	10	10	12	16						
3K WS	3	3	3	3	4	4	4	5	6	6	7	8	8	10	12	15					
3K HD	3	3	3	3	4	5	5	6	7	7	9	9	10	11	15						
2K	3	3	3	3	3	3	3	3	4	4	4	5	5	6	7	9	11				
2K WS	3	3	3	3	3	3	3	3	3	3	4	4	4	5	6	7	8	11	13	13	
2K HD	3	3	3	3	3	3	3	3	3	4	4	4	5	5	7	8	10				
1K WS	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	5	5	6	9
1K HD	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	5	7	8	8	

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EPIC MYSTERIUM-X: REDMAG 1.8" SSD 128GB

	CAPTURE FRAME RATE (FPS)																				
FORMAT	**12**	**24**	**25**	**30**	**40**	**48**	**50**	**60**	**72**	**75**	**90**	**96**	**100**	**120**	**150**	**175**	**210**	**250**	**288**	**300**	**400**
5K	3	3	4	4	5	6	7	8	9	10	12	12									
5K 2:1	3	3	3	4	5	6	6	8	9	9	11	12	12								
5K WS	3	3	3	3	4	5	5	6	8	8	9	10	10	12							
5K HD	3	3	3	4	5	6	6	8	9	9	11	12									
5K ANA	3	3	3	3	4	5	5	6	7	7	8	9									
4K	3	3	3	3	4	4	5	5	6	7	8	8	9	10							
4K WS	3	3	3	3	3	4	4	4	5	5	6	7	7	8	10						
4K HD	3	3	3	3	4	4	4	5	6	6	7	8	8	10							
3K	3	3	3	3	3	3	3	3	4	4	5	5	5	6	8						
3K WS	3	3	3	3	3	3	3	3	3	3	4	4	4	5	6	7					
3K HD	3	3	3	3	3	3	3	3	4	4	4	5	5	6	7						
2K	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	5				
2K WS	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	5	6	7	
2K HD	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	5				
1K WS	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4
1K HD	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4	

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EPIC MYSTERIUM-X: REDMAG 1.8" SSD 512GB

	CAPTURE FRAME RATE (FPS)																				
FORMAT	**12**	**24**	**25**	**30**	**40**	**48**	**50**	**60**	**72**	**75**	**90**	**96**	**100**	**120**	**150**	**175**	**210**	**250**	**288**	**300**	**400**
5K	3	3	3	4	5	6	6	7	8	9	10	11									
5K 2:1	3	3	3	4	5	5	6	7	8	8	10	10	11								
5K WS	3	3	3	3	4	5	5	6	7	7	8	9	9	11							
5K HD	3	3	3	4	5	5	6	7	8	8	10	10									
5K ANA	3	3	3	3	3	4	4	5	6	6	7	8									
4K	3	3	3	3	3	4	4	5	5	6	7	7	7	9							
4K WS	3	3	3	3	3	3	3	4	4	5	5	6	6	7	9						
4K HD	3	3	3	3	3	4	4	4	5	5	6	7	7	8							
3K	3	3	3	3	3	3	3	3	3	3	4	4	4	5	7						
3K WS	3	3	3	3	3	3	3	3	3	3	3	3	4	4	5	6					
3K HD	3	3	3	3	3	3	3	3	3	3	4	4	4	5	6						
2K	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	5				
2K WS	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	5	5	6	
2K HD	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	4				
1K WS	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4
1K HD	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	4	

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SCARLET MYSTERIUM-X REDCODE OPTIONS

The SCARLET MYSTERIUM-X REDCODE and frame rate pairings are identical for all RED MINI-MAG and REDMAG 1.8" SSD media.

	CAPTURE FRAME RATE (FPS)													
FORMAT	**12**	**24**	**25**	**30**	**40**	**48**	**50**	**60**	**72**	**75**	**90**	**96**	**100**	**120**
5K	5													
5K 2:1	5													
5K WS	4													
5K HD	5													
5K ANA	3													
4K	3	6	6	8										
4K WS	3	5	5	6										
4K HD	3	6	6	7										
3K	3	4	4	4	6	7								
3K WS	3	3	3	4	5	6	6	7						
3K HD	3	3	4	4	5	6								
2K	3	3	3	3	3	3	3	4						
2K WS	3	3	3	3	3	3	3	3	4	4				
2K HD	3	3	3	3	3	3	3	4						
1K WS	3	3	3	3	3	3	3	3	3	3	3	3	3	3
1K HD	3	3	3	3	3	3	3	3	3	3	3			

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